EUROPEAN COMMISSION
DG Competition

Case M.8851 - BASF / BAYER DIVESTMENT BUSINESS

Only the English text is available and authentic.

REGULATION (EC) No 139/2004 MERGER PROCEDURE

Article 6(1)(b) in conjunction with Art 6(2)
Date: 30/04/2018

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EUROPEAN COMMISSION

Brussels, 30.4.2018
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PUBLIC VERSION

In the published version of this decision, some information has been omitted pursuant to Article 17(2) of Council Regulation (EC) No 139/2004 concerning non-disclosure of business secrets and other confidential information. The omissions are shown thus […]. Where possible the information omitted has been replaced by ranges of figures or a general description.

To the notifying party

Subject: **Case M.8851 – BASF/Bayer Divestment Business**
Commission decision pursuant to Article 6(1)(b) in conjunction with Article 6(2) of Council Regulation No 139/2004[1] and Article 57 of the Agreement on the European Economic Area[2]

[1] OJ L 24, 29.1.2004, p. 1 (the 'Merger Regulation'). With effect from 1 December 2009, the Treaty on the Functioning of the European Union ('TFEU') has introduced certain changes, such as the replacement of 'Community' by 'Union' and 'common market' by 'internal market'. The terminology of the TFEU will be used throughout this decision.

[2] OJ L 1, 3.1.1994, p. 3 (the 'EEA Agreement').

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Dear Sir or Madam,

(1) On 7 March 2018, the European Commission (the 'Commission') received notification of a proposed concentration pursuant to Article 4 of the Merger Regulation by which BASF SE ('BASF' or the 'Notifying Party', Germany) would acquire, within the meaning of Article 3(1)(b) of the Merger Regulation, control over parts of Bayer Aktiengesellschaft ('Bayer', Germany) (the 'Transaction').[3]

(2) The present Transaction takes place as a result of a prior notification to the Commission of a proposed concentration between Bayer and Monsanto. By decision of 21 March 2018, adopted in application of Article 8(2) of the Merger Regulation, the Commission declared that concentration between Bayer and Monsanto compatible with the internal market and the EEA Agreement[4] (the 'Bayer/Monsanto decision'), subject to full compliance with the commitments annexed to that decision (the 'Bayer/Monsanto Commitments'). Pursuant to the Bayer/Monsanto Commitments, Bayer committed to divest certain assets.

(3) On 9 April 2018,[5] following a modification of the Bayer/Monsanto Commitments, BASF notified to the Commission a modification of the scope of the Transaction. The modification[6] of the scope of the Transaction consists in:

(a) The acquisition of Bayer's Poncho, VOTiVO, Poncho/VOTiVO, VOTiVO/RedigoM, COPeO, and ILeVO nematicidal seed treatment businesses (the 'Seed Treatment Assets') instead of Monsanto's NemaStrike nematicide business; and

(b) The acquisition of Bayer's digital agriculture business worldwide (the 'Digital Agriculture Assets') instead of the granting to BASF of a binding, perpetual, irrevocable and sole worldwide licence to Bayer's current and pipeline digital agriculture products.

(4) The scope of the Transaction is defined in the asset purchase agreements, entered into between Bayer and BASF on 13 October 2017 (the 'APAs'), as subsequently amended by the non-binding term sheet of 16 February 2018 and by the letter of intent dated 5 March 2018. The assets and personnel included in the revised scope of the Transaction are referred to in this Decision as the 'Bayer Divestment Business'. BASF and the Bayer Divestment Business are referred to together as the 'Parties'.

1. THE PARTIES

(5) **BASF** is active worldwide in a range of businesses organised in five segments: chemicals (e.g. petrochemicals and intermediates), performance products (e.g. dispersion and pigments), functional materials and solutions

[3] Publication in the Official Journal of the European Union No C 96, 14.3.2018, p. 34.

[4] Commission Decision in Case M.8084 – Bayer/Monsanto (2018).

[5] BASF's submission pursuant to Article 5(3) of Commission Regulation (EC) No 802/2004 ('BASF 5(3) Submission').

[6] The Commission approved Bayer's request to modify the commitments on 11 April 2018.

(e.g. construction chemicals and coatings), oil & gas, and agricultural solutions. In the pesticides sector, BASF offers fungicides, insecticides, and herbicides as well as seed treatment products. Moreover, BASF is active in the discovery of genes that can be used to develop genetically modified ('GM') crops.

(6) **The Bayer Divestment Business** consists of assets and personnel relating to Bayer's: (i) global broad acre crop seeds and traits business; (ii) global glufosinate ammonium ('GA') business; (iii) EEA agricultural and non-agricultural glyphosate business; (iv) non-selective herbicide ('NSH') lines of research relating to [NSH line of research 2]; [NSH line of research 3], and [NSH line of research 1]; (v) Seed Treatment Assets; (vi) Digital Agriculture Assets; and (vi) global vegetable seeds business.

2. THE CONCENTRATION

(7) Through the Transaction, BASF would acquire sole control over the Bayer Divestment Business within the meaning of Article 3(1)(b) of the Merger Regulation by way of purchase of assets.

3. UNION DIMENSION

(8) The undertakings concerned have a combined aggregate world-wide turnover of more than EUR 2 500 million [*BASF: EUR 64.5 billion; the Bayer Divestment Business: EUR* […]]. Moreover, the undertakings concerned have a combined aggregate turnover in excess of EUR 100 million in three Member States and have a turnover in excess of EUR 25 million in these three Member States [[…] – *BASF: EUR* […], *the Bayer Divestment Business: EUR* […]*;* […] – *BASF: EUR* […], *the Bayer Divestment Business: EUR* […]*;* […] – *BASF: EUR* […], *the Bayer Divestment Business: EUR* […]]. The undertakings concerned do not achieve more than two-thirds of their aggregate Union-wide turnover within one and the same Member State. The notified operation therefore has an Union dimension pursuant to Article 1(3) of the Merger Regulation.

4. COMPETITIVE ASSESSMENT

(9) The Commission considers below the competitive effects of the Transaction in the areas in which the Parties at least partially overlap: (i) weed management (in particular NSH innovation), (ii) traits, in particular herbicide tolerance trait innovation and disease resistance trait innovation, (iii) nematicidal seed treatment; and (iv) digital agriculture. There is no horizontal overlap between the Parties as regards broad acre crop seeds, glufosinate, glyphosate and vegetable seeds. There is also no vertical link giving rise to affected markets between those activities and the activities discussed in this Decision. These non-overlapping activities are, therefore, not further discussed in this Decision.

(10) The Commission assesses below the likelihood that serious doubts arise regarding the compatibility of the Transaction with the internal market and the EEA Agreement, in relation to current and potential competition as well as to innovation competition.

(11) As set out in *Dow/DuPont* and *Bayer/Monsanto*[7] and further detailed in Section 4.1.5.1, when considering the likely impact of transactions on innovation competition the Commission takes into account in particular the closeness and importance of the Parties' respective innovation efforts, and assesses the corresponding likelihood that at least part of these efforts would be discontinued, delayed or reoriented as a result of the Transaction.

4.1. Weed management

4.1.1. Introduction

(12) The Parties do not overlap in the EEA regarding their current activities in NSH and selective herbicides, BASF having no NSH sales and the Bayer Divestment Business having no selective herbicide sales in the EEA. The Parties also do not overlap regarding innovation relative to selective herbicides, the Bayer Divestment Business having no selective herbicide research. Finally, the Parties do not overlap regarding weed management systems, since BASF is not a weed management system player.[8] Accordingly, the Commission only assesses the Parties' activities in innovation relating to NSH.

(13) NSH are products that have a broad spectrum of action and kill both grasses and broadleaf weeds. In particular, and contrary to selective herbicides, they can harm or even kill the crops on which they are used. NSH have four main agricultural uses: (i) so-called 'burndown' pre- or post-season to clear a field of all vegetation (including volunteer crops), (ii) so-called 'over-the-top' or 'OTT' use, in combination with herbicide-tolerant crops to clear fields of weeds during the planting season, (iii) as a pre-harvest desiccating treatment, accelerating and evening the ripening process, and (iv) so-called 'trees, nuts and vines' or 'TNV' uses to kill weeds around resistant crops such as fruit trees. Use of NSH is more limited in the EEA than globally, largely because of stricter regulation in terms of both authorised doses and uses.

(14) From a global perspective, there are currently four key NSH molecules or active ingredients ('AI's): glyphosate, glufosinate ammonium ('glufosinate' or 'GA'), diquat and paraquat. While all four molecules can be characterised as NSH, they may differ in terms of mode of action ('MoA') and spectrum, and suitability for given uses. NSH are under regulatory pressure globally, in particular in the EEA, where paraquat is no longer approved and uses of the other three AIs have been already restricted (for instance, glufosinate).

(15) Since new MoAs have not been introduced to the herbicide market in several decades, managing growing resistance to existing MoAs is of paramount importance. The issue is particularly acute in NSH because of the widespread use of glyphosate over glyphosate-tolerant crops, which has led to the development of resistant weed populations. In practice, many AIs can typically only be used once or, at most, twice per crop cycle, and sometimes entire MoAs are limited to one or two uses per crop cycle.

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7 See Commission Decision in Cases M.7932 – Dow/DuPont (2017) and M.8084 – Bayer/Monsanto (2018).

8 Form CO, chapters 6B.1 and 6B.2. See also Commission Decision in Case M.8084 – Bayer/Monsanto (2018), Section XI.1.

(16) Because of the two main constraints – resistance management and a limited number of windows for treatment – growers need to develop spray programmes to fully address their weed control needs. To facilitate this process, commercial products are increasingly mixtures of several AIs with different MoAs. Such mixtures allow to limit resistance development and to broaden spectrum in order to solve as many weed problems as possible in the few available treatment opportunities. Another way to limit resistance is to rotate AIs – in particular different MoAs and chemical classes.[9]

4.1.2. Definition of innovation spaces in NSH

4.1.2.1. Commission precedents

(17) In *Dow/DuPont* and *Bayer/Monsanto*, the Commission considered that innovation should not be understood as a market in its own right, but as an input activity for downstream product markets. While innovation eventually results in products competing on those markets, the assessment of innovation competition cannot be directly conflated with the relevant downstream product markets.

(18) The assessment of the effects on innovation competition of a merger in the crop protection industry such as the present one requires the identification and analysis of those spaces in which innovation competition occurs, so as to assess whether the Transaction would significantly impede innovation competition in such spaces.

(19) Indeed, R&D players such as the Parties do not innovate for all the product markets composing the entire crop protection industry at the same time. They do not innovate randomly either, but targeting specific spaces within that industry. When setting up their innovation capabilities and conducting their research, they target specific innovation spaces which are upstream of lucrative product markets and product markets which are of strategic interest for the R&D player in question. In order to assess innovation competition, it is thus important to consider the spaces in which this innovation competition occurs.

(20) In *Bayer/Monsanto*,[10] the Commission considered that innovation spaces for NSH are burndown and over-the-top uses across crops, as well as weed management in perennial crops (TNV). It also considered that, when looking at innovation spaces for NSH, innovators attempt to discover and develop molecules that would be suited for as many areas as possible, and usually at least for burndown and over-the-top uses. Therefore, when assessing the parties' innovation efforts, the Commission focused on their efforts for NSH overall and only further discussed the specific impact on individual NSH uses (burndown, over-the-top uses across crops and weed management in perennial crops - TNV) as appropriate.

(21) The Commission further took the view that innovation spaces for NSH are global, because innovation efforts are rolled-out in all possible geographies across the globe.

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9 See Commission Decision in Case M.7932 – Dow/DuPont (2017), Section V.6.6.1.6.

10 See Commission Decision in Case M.8084 – Bayer/Monsanto (2018), Section XI.1.4.1.

4.1.2.2. Notifying Party's views

(22) In its submissions, the Notifying Party did not specifically address the question of the definition of innovation spaces or more generally the appropriate framework to assess innovation competition.

4.1.2.3. Commission assessment

(23) In the absence of any new facts or arguments brought by the Parties or resulting from the Commission's investigation, the Commission confirms the conclusions reached in *Bayer/Monsanto*.[11]

(24) The Commission thus takes the view that innovation spaces for NSH are burndown and over-the-top uses across crops, as well as weed management in perennial crops (TNV). It must be noted, however, that when looking at innovation spaces for NSH, innovators attempt to discover and develop molecules that would be suited for as many areas as possible, and usually at least for burndown and over-the-top uses. Therefore, when assessing the Parties' innovation efforts, the Commission will focus on their efforts for NSH overall and will only further discuss the specific impact on individual NSH uses (burndown, over-the-top uses across crops and weed management in perennial crops - TNV), as appropriate.

(25) The Commission further takes the view that innovation spaces for NSH are global, because innovation efforts are rolled-out in all possible geographies across the globe.

4.1.2.4. Conclusion

(26) In light of its precedents and taking into account the results of its investigation, the Commission considers that the relevant spaces to assess NSH innovation are the ones including R&D investment and activities targeting the development of NSH products, either as a whole or for specific NSH uses such as conventional use in perennial crops (TNV), burndown and over-the-top uses across crops, globally.

4.1.3. Activities of the Parties and their competitors

4.1.3.1. BASF's herbicide innovation[12]

(27) BASF has several herbicide pipeline projects. Those projects relate to the following molecules or chemical classes: trifludimoxazin (a protoporphyrinogen oxidase inhibitor or '[mode of action 1]'-inhibitor), [NSH line of research 1], [NSH line of research 3], [herbicide line of research 4] and cinmethylin (a Fat-A inhibitor). Aside from cinmethylin (for which only selective uses in cereals and rice are being developed), these chemistries are – depending on the specific chemistry – being developed for […]. The following paragraphs detail each project.

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11 See Commission Decision in Case M.8084 – Bayer/Monsanto (2018), Section XI.1.4.1.

12 Form CO, chapter 6B.1, paragraphs 425-426.

(28) **[NSH line of research 1]**. BASF has […] pipeline projects.

(29) On the one hand, BASF has **trifludimoxazin** […], a residual broad spectrum herbicide with strength on broadleaf weeds and [mode of action 1]-resistance-breaking activity currently in Phase 3 (development). Registration activities are ongoing, with planned dossier submission in the first semester of 2018 (excluding the EEA and Brazil). Trifludimoxazin is not intended to be registered or launched in the EEA. Target applications globally are burndown, TNV and OTT use with herbicide tolerance ('HT') traits across multiple crops both pre-emergence and post-emergence.

(30) The combination of trifludimoxazin with BASF's currently commercialised saflufenacil [mode of action 1] chemistry (sold under the Kixor brand, only outside the EEA) provides broad spectrum weed control and control of [mode of action 1]-resistant weeds. In particular, the combination of [trifludimoxazin] with Kixor will offer growers (i) a burndown option for warm season crops, and (ii) a herbicide for OTT use – in combination with an HT trait – in several crops, including soybean, cotton and corn, giving growers a new resistance-breaking option.

(31) On the other hand, BASF has [NSH line of research 1].

Figure 1 – BASF's [NSH line of research 1] project (1)

[…]

Source: BASF's response to the Commission's request for information RFI Q32, Annex Q.16.6, page 2.

Figure 2 – BASF's [NSH line of research 1] project (2)

[…]

Source: BASF's response to the Commission's request for information RFI Q32, Annex Q.16.6, page 4.

(32) [NSH line of research 3].[13] […].[14]

(33) [Herbicide line of research 4].[15]

(34) **Cinmethylin**. BASF's pipeline project relating to the cineole class of chemistry ([cinmethylin]) is in late-stage development (Phase 3), and its registration application is expected to be submitted in the second quarter of 2018. [Cinmethylin] is a selective pre-emergence herbicide for cereals and rice. It is in particular not intended for OTT use in combination with an HT trait, or for burndown or TNV uses.

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13 [NSH line of research 3] are [mode of action 3] from a novel chemical class, which show promising efficacy across a large spectrum of weeds – notably weeds resistant to glyphosate and broadleaf weeds.

14 […].

15 See for instance BASF's response to the Commission's request for information RFI 10, including Annex Q.4.3. […].

(35) Table 1 lists all BASF herbicide pipeline projects.

Table 1 – BASF's herbicide pipeline

Product name	Chemical class / AI	Mode of action	Pipeline stage	Intended uses	Main crop	Earliest possible launch date	EEA (Yes/ No)
[Trifludimoxazin]	Trifludi-moxazin	[Mode of action 1]	Phase 3 (registration submission)	Burndown uses: yes OTT use with HT trait: yes Selective: yes (pre-plant in non-HT systems) Application timing: pre- & post-emergence Broad spectrum with strength on small seeded broadleaves	Multiple crops TNV: yes (citrus, pome fruit, oil palm)	2020	No
[NSH line of research 1]	[...]	[Mode of action 1]	[…]	[…]	[…]	[…]	[…]
[NSH line of research 3]	[…]	[…]	[…]	[…]	[…]	[…]	[…]
[Herbicide line of research 4]	[…]	[…]	[...]	[…]	[…]	[…]	[…]
[Cinmethylin]	Cinmethylin	Fat-A inhibitor	Phase 3 (registration submission maybe in Q2 2018)	Burndown: no OTT use with HT trait: no Selective: yes (cereals & rice) Application timing: pre-emergence Residual: yes Spectrum: strength in cold season grasses, weak on broadleaves	Cereals, rice TNV: no	2019/2020	Yes

Source: Form CO, chapter 6B.1.

4.1.3.2. The Bayer Divestment Business's herbicide innovation[16]

(36) The Bayer Divestment Business includes data and know-how gathered by Bayer from laboratory and field trials relating to all non-selective uses conducted on certain classes of chemistry (but not data or know-how relating to selective uses, which Bayer retains), as well as information on the structure and samples of the relevant molecules. The three relevant chemical classes are: [NSH line of research 2], [NSH line of research 1] and [NSH line of research 3]. The Bayer Divestment Business also includes exclusive licences to Bayer's intellectual property rights relating to these chemical classes for non-selective uses (which are (i) the control of unwanted vegetation in permanent crops and plantation crops, such as trees, nuts and vines; (ii) burndown; and (iii) over-the-top use over HT field crops), as well as lead scientists working on these lines of research (in accordance with local labour law).

(37) The Bayer Divestment Business's NSH lines of research target […], as detailed in the following paragraphs. In view of the early stage of the Bayer Divestment Business's pipeline projects, planned peak sales as well as specific target geographic markets are not yet available.

(38) **[NSH line of research 1]**. The Bayer Divestment Business is researching [NSH line of research 1] system of herbicide tolerant crops. As shown in Figure 3 to Figure 6, the latest available pipeline information confirms that the project shows promising efficacy and resistance-breaking properties (in regard both to older [NSH line of research 1] and to glyphosate). It is being actively pursued, with promotion to phase […] planned for […] and market launch for […]. This research began at the end of 2016 and the Bayer Divestment Business already promoted the first molecule from this class – […] – to field testing in 2017. Meanwhile, […] further candidate molecules have been identified and will be tested in the 2018 field season in comparison to […].

Figure 3 – The Bayer Divestment Business's [NSH line of research 1] project (1)

[…]

Source: BI 33681 "2017-12-15 WM_RPC_Annual Portfolio Review", page 88 [highlighting added].

Figure 4 – The Bayer Divestment Business's [NSH line of research 1] project (2)

[…]

Source: BI 33681 "2017-12-15 WM_RPC_Annual Portfolio Review", page 94 [highlighting added].

Figure 5 – The Bayer Divestment Business's [NSH line of research 1]) information package (1)

[…]

Source: Bayer's internal document "[NSH line of research 1] Information Package", page 11.

[16] Form CO, chapter 6B.1, paragraphs 432-433.

Figure 6 – The Bayer Divestment Business's [NSH line of research 1] information package (2)

[…]

Source: Bayer's internal document "[NSH line of research 1] Information Package", page 12.

(39) **[NSH line of research 3]**. […].

(40) […].

(41) […].

Figure 7 – The Bayer Divestment Business's [NSH line of research 3] project

[…]

Source: BI 33681 "2017-12-15 WM_RPC_Annual Portfolio Review", page 78 [highlighting added].

(42) **[NSH line of research 2]**. […].

(43) As shown in Figure 8 and Figure 9, the latest available pipeline information confirms the Bayer Divestment Business's continuing efforts in developing its [NSH line of research 2].

Figure 8 – The Bayer Divestment Business's [NSH line of research 2] project (1)

[…]

Source: BI 33681 "2017-12-15 WM_RPC_Annual Portfolio Review", page 34 [highlighting added].

Figure 9 – The Bayer Divestment Business's [NSH line of research 2] project (2)

[…]

Source: BI 33681 "2017-12-15 WM_RPC_Annual Portfolio Review", page 38 [highlighting added].

(44) Table 2 lists the currently active molecules from the Bayer herbicide lines of research which would transfer to BASF in the Bayer Divestment Business. The list also includes the relevant molecules that were active during the Commission's investigation in Case M.8084 – *Bayer/Monsanto* and would also transfer in the Bayer Divestment Business, but which have since been cancelled.

Table 2 – The Bayer Divestment Business's herbicide pipeline

Product name	Chemical class / AI	Pipeline stage	Use	Mode of action	Main crop	EEA (Yes/ No)
[…]	[NSH line of research 1]	[…]	[…]	[…]	[…]	[…]
[…]	[NSH line of research 1]	[…]	[…]	[…]	[…]	[…]
[…]	[NSH line of research 1]	[…]	[…]	[…]	[…]	[…]
[…]	[NSH line of research 1]	[…]	[…]	[…]	[…]	[…]
[…]	[NSH line of research 1]	[…]	[…]	[…]	[…]	[…]
[…]	[NSH line of research 2]	[…]	[…]	[…]	[…]	[…]

Product name	Chemical class / AI	Pipeline stage	Use	Mode of action	Main crop	EEA (Yes/ No)
[…]	[NSH line of research 2]	[…]	[…]	[…]	[…]	[…]
[…]	[NSH line of research 2]	[…]	[…]	[…]	[…]	[…]
[…]	[NSH line of research 2]	[…]	[…]	[…]	[…]	[…]
[…]	[NSH line of research 2]	[…]	[…]	[…]	[…]	[…]
[…]	[NSH line of research 2]	[…]	[…]	[…]	[…]	[…]
[…]	[NSH line of research 2]	[…]	[…]	[…]	[…]	[…]
[…]	[NSH line of research 2]	[…]	[…]	[…]	[…]	[…]
[…]	[NSH line of research 2]	[…]	[…]	[…]	[…]	[…]
[…]	[NSH line of research 2]	[…]	[…]	[…]	[…]	[…]
[…]	[NSH line of research 2]	[…]	[…]	[…]	[…]	[…]
[…]	[NSH line of research 3]	[…]	[…]	[…]	[…]	[…]
[…]	[NSH line of research 3]	[…]	[…]	[…]	[…]	[…]

Source: Form CO, chapter 6B.1.

(45) The above description of the Parties' respective herbicide pipelines shows that the Parties overlap only in NSH innovation with a number of lines of research. The Commission assesses these overlaps in Section 4.1.5.

4.1.3.3. Competitors' innovation in NSH

(46) The Parties, like many players in the industry, carefully monitor competitors, in particular pipelines, through expert intelligence. They monitor patent activity and reproduce competitor-patented molecules to assess targets and efficacy. They also scrutinise ISO common name applications as well as investor presentations, where all crop protection players present their pipelines, which are the heart of their future revenues and value. The Parties are thus able to identify competitor pipeline pressure to correctly project future sales and assess the current value of their own pipeline projects. These competing existing and future products are thus taken into account in the Parties' predictions for the success of their own forthcoming products.

(47) On the basis of the information contained in the Parties' competitive intelligence, it appears that there is little competing R&D activity in NSH, [NSH line of research 1], as confirmed by Figure 10 to Figure 13.

Figure 10 – Weed control pipeline landscape (Bayer view)

[…]

Source: BI 33681 "2017-12-15 WM_RPC_Annual Portfolio Review", page 14 [highlighting added].

Figure 11 – Weed management competitor patent activity

[…]

Source: BI 33681 "2017-12-15 WM_RPC_Annual Portfolio Review", page 13 [highlighting added].

Figure 12 – Weed control pipeline landscape (BASF view) (1)

[…]

Source: BASF's response to the Commission's request for information RFI 11, Annex Q.2.2., page 79.

Figure 13 – Weed control pipeline landscape (BASF view) (2)

[…]

Source: BASF's response to the Commission's request for information RFI 11, Annex Q.2.2., page 80.

(48) […], as detailed in Section 4.1.5.1.

4.1.4. Notifying Party's views

(49) In the Form CO, the Notifying Party in essence argued that:

(a) BASF does not manufacture or sell NSH in the EEA and there are thus no overlaps between the Parties there;

(b) BASF's pipeline chemistries are not substitutes for the Bayer Divestment Business's current products and lines of research since BASF's projects […];

(c) BASF would in any event have every incentive to pursue its own NSH lines of research in view of (i) glufosinate's uncertain future in the EEA, (ii) resistance management and (iii) higher margins on novel patent-protected AIs compared with off-patent AIs;

(d) the Bayer Divestment Business's [NSH line of research 2] and [NSH line of research 1] do not overlap with BASF's existing chemistry, […], and BASF would therefore have full incentives to pursue the Bayer Divestment Business's lines of research;

(e) there is no overlap between BASF's [NSH line of research 3] and [herbicide line of research 4] and the Bayer Divestment Business's [NSH line of research 3] and [NSH line of research 2], and therefore no scope for concerns in that regard;

(f) there is likely no overlap between the Parties' respective [NSH line of research 1], […], and therefore no scope for concerns in that regard, especially given BASF's strong incentives to pursue both [NSH line of research 1] as possible complements and in view of the high attrition rate of research projects at such early research stages; and

(g) there is a high degree of uncertainty regarding the successful outcome, final technical characteristics and commercial prospects of the Parties' herbicide lines of research since they are still in discovery.[17]

4.1.5. Competitive assessment in NSH innovation

(50) Currently, both Parties have R&D efforts in NSH, as detailed in Section 4.1.3.

(51) The Parties claimed that there would be no overlap or at least sufficient scope for differentiation between the Parties' respective lines of research, notably in view of different technical profiles (weed spectrum, selectivity, residuality, toxicology, resistance-breaking ability, global registrability, target crops and uses, etc.) and timing.[18] BASF would thus have every incentive to fully pursue the Bayer Divestment Business's NSH lines of research in parallel with its own lines of research.

(52) In particular, […]. By contrast, […].[19]

(53) Moreover, the Parties also claimed that a large number of competing innovators for NSH – including [NSH line of research 1] – would in any event continue to constrain the Parties.[20]

(54) However, the Commission considers in light of its investigation and the available information that the Transaction would raise serious doubts as to its compatibility with the internal market and the EEA Agreement in view of a possible overlap between the Parties' respective lines of research for the development of NSH with a [NSH line of research 1] mode of action. The likely effects of the Transaction on innovation for NSH (i) with a [NSH line of research 1] mode of action, (ii) based on the [NSH line of research 2] chemistry and (iii) based on the [NSH line of research 3] chemistry are assessed separately below.

4.1.5.1. The Transaction would likely reduce innovation competition between the Parties' overlapping and close NSH pipeline projects with a [NSH line of research 1]

(A) The Parties have overlapping and close NSH lines of research based on the [NSH line of research 1] MoA

(55) In spite of the Parties' arguments to the contrary, it is apparent from the description of the Parties' R&D efforts in NSH innovation in Section 4.1.3 that their respective [NSH line of research 1] projects overlap.

(56) The Commission's investigation indicates that the Transaction would create an overlap likely giving rise to innovation competition concerns because (i) the

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17 Form CO, chapter 6B.1, paragraphs 421, 440, 442 and 449-457. See also the Parties' Memorandum on [NSH line of research 1], 21 March 2018.

18 Form CO, chapter 6B.1, paragraphs 452-457. See also the Parties' Memorandum on [NSH line of research 1], 21 March 2018.

19 Form CO, chapter 6B.1, paragraph 454. The Commission notes that 'total herbicides' is a way for BASF to refer to NSH (see Form CO, chapter 6B.1, paragraph 396, second bullet).

20 Parties' Memorandum on [NSH line of research 1], 21 March 2018, Section 5.

Parties' respective [NSH line of research 1] pipeline projects appear to be both targeting the same uses ([…]), (ii) the Parties' respective [NSH lines of research 1] appear to be from the same chemical class and have similar technical profiles, and (iii) there is likely only one other competing [NSH line of research 1] molecule ([…]) with the potential of having a global reach.

(57) This conclusion is consistent with the findings in *Bayer/Monsanto* that the combination of […] of the […] existing [NSH lines of research 1] ([…]) would likely lead to a significant impediment to effective competition because of (i) their close technical characteristics as well as target uses and (ii) similar timing for use over HT crops.[21]

(58) Indeed, BASF's own assessment of existing [NSH line of research 1] research projects suggests that BASF's […] and the Bayer Divestment Business's [NSH line of research 1] are as close to one another as […] and the Bayer Divestment Business's [NSH line of research 1] in terms of technical characteristics, target uses and timing for use over HT crops. This is notably so because BASF's […] project is closely derived from the […] molecule, which is for instance illustrated in Figure 15.

(59) Figure 14 and Figure 15, extracted from a BASF presentation to the Commission, illustrate the technical closeness of BASF's […] [NSH line of research 1] candidate, […].

Figure 14 – Excerpts from BASF's presentation to the case team on 14 March 2018 (1)

[…]

Source: BASF's presentation to the Commission on 14 March 2018 'New [NSH line of research 1], page 7.

Figure 15 – Excerpts from BASF's presentation to the case team on 14 March 2018 (2)

[…]

Source: BASF's presentation to the Commission on 14 March 2018 'Overview of [NSH line of research 1] chemistries'.

(60) These elements confirm the Commission's view that BASF's […] and the Bayer Divestment Business's [NSH line of research 1] project are from the same chemical class and have similar technical characteristics.[22]

(61) Similarly, the Commission's view that the Parties' respective [NSH line of research 1] projects overlap in terms of at least some of their target uses is confirmed by their respective descriptions in Section 4.1.3.

(62) In sum, the Commission considers that the Parties currently have overlapping and close NSH pipeline projects with a [NSH line of research 1] MoA.

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21 See the Commission Decision in Case M.8084 – Bayer/Monsanto (2018), Section XI.1.

22 See also the Parties' Memorandum on [NSH line of research 1], 21 March 2018, paragraphs 3.6 to 3.8.

(B) The Transaction would likely reduce innovation competition in NSH with a [NSH line of research 1] MoA

(63) Paragraph 38 of the Horizontal Merger Guidelines provides that '*effective competition may be significantly impeded by a merger between two important innovators, for instance between two companies with 'pipeline' products related to a specific product market*'.

(64) This can be the case if the pipeline product (or line of research) of one of the merging parties was likely to capture significant revenues from the actual or potential competing product of the other merging party (be it another pipeline product – or line of research – or products currently marketed). This adverse externality is internalised post-merger – from the perspective of each innovator, the expected loss of profits on the products of the other merging firm adds to the opportunity cost of innovating – making it more likely that post-Transaction a pipeline product (or line of research) is discontinued, deferred or redirected (particularly in the presence of significant development and commercialisation costs as is the case in crop protection).

(65) Consumers may also ultimately be harmed in this case by both the loss of product quality and variety and the reduced intensity of future product market competition in the markets where the discontinued/deferred/redirected pipeline product(s) would potentially have been introduced but for the Transaction. This effect applies both in the short-term, notably in relation to existing pipeline products and current lines of research, and over time, in relation to future R&D efforts.

(66) As explained in Section 4.1.5.1.A, in this case the Commission considers that the Parties currently have overlapping and close NSH pipeline projects with a [NSH line of research 1] MoA. In particular, BASF's […] and Bayer's [NSH line of research 1] target – at least partly – the same uses ([…]). They also appear to be from the same chemical class and have similar technical profiles ([…]).

(67) The products resulting from these respective [NSH lines of research 1] are therefore likely to cannibalise each other's future NSH sales, thereby reducing the incentives for the merged entity to continue post-Transaction with both of the Parties' [NSH lines of research 1] with the same intensity as each of the Parties would have in the absence of the Transaction.

(68) Accordingly, the Commission considers it likely that the merged entity would discontinue, delay or reorient one or both of the Parties' respective [NSH lines of research 1] post-Transaction.

(69) In alleging that […] and the [NSH line of research 1] project would potentially be sufficiently differentiated (in terms of resistance-breaking activity, global registrability and launch timing) to provide a clear incentive for the merged entity to fully pursue both projects post-Transaction[23] – the Parties explained that '*BASF would have a clear incentive to develop the Bayer* [NSH line of research 1] *Project […] so as <u>to complement</u> the* [NSH line of research 1] *projects it is currently pursuing*' and that the [NSH line of research 1] '*would be*

[23] Parties' Memorandum on [NSH line of research 1], 21 March 2018, Section 3.

a useful and most welcome supplement to the BASF [NSH line of research 1] *portfolio*' (emphasis added in both cases).[24]

(70) The Parties argued that these statements and their supporting evidence show that […] and the [NSH line of research 1] project are sufficiently differentiated pre-Transaction to justify their continued full development post-Transaction in a way similar to what the Parties would separately have done in the absence of the Transaction: '*BASF would have a clear incentive to develop it […] and this incentive would be no different to Bayer's incentive to develop the product, absent the* Bayer/Monsanto *deal*' (emphasis added).[25]

(71) However, on the contrary, the Commission considers that these statements in fact suggest that the merged entity would post-Transaction not have the same incentive to develop both projects as they would have been pre-Transaction. Indeed, these statements suggest that the merged entity would likely orient the two lines of research to be complements rather than (at least partial) substitutes, which they likely would have been if left in the respective hands of two independent players absent the Transaction.

(72) In any event, even the Parties acknowledged that this alleged incentive to fully pursue both projects would be particularly present "*if the new [NSH line of research 1] has some combination of differentiated chemistry, resistance-breaking properties and/or global registrability*", which at this stage is not confirmed on the basis of the latest available data on both […] and the [NSH line of research 1] project.[26]

(73) The Parties further argued that this case would be materially different from *Bayer/Monsanto* in view of (i) the absence of any collaboration creating uncertainty as to BASF's ability to pursue [NSH line of research 1]; and (ii) the absence of any synergy plans regarding NSH innovation, by contrast with the evidence relied upon in *Bayer/Monsanto*.[27]

(74) The Commission notes regarding the first point that the described uncertainty was only a subsidiary consideration – specifically related to the identified risks regarding the collaboration between Monsanto and Sumitomo on the [NSH line of research 1] – in its concerns relating to NSH innovation in *Bayer/Monsanto*.

(75) Regarding the second point, the Commission notes that BASF only very recently decided to acquire the Bayer Divestment Business, in particular the [NSH line of research 1]. It is therefore unsurprising that BASF would not have drafted synergy plans in the ordinary course of business, as it would at this stage likely not have had sufficient time to prepare such plans.

(76) Nevertheless, the Commission considers it likely that BASF – once the acquisition would be consumed – would proceed with testing to profile the [NSH line of research 1] project. Such profiling would likely confirm the Commission's view in the present Decision – based on the latest available

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24 Parties' Memorandum on [NSH line of research 1], 21 March 2018, paragraphs 3.9 and 3.20.
25 Parties' Memorandum on [NSH line of research 1], 21 March 2018, paragraph 3.13.
26 Parties' Memorandum on [NSH line of research 1], 21 March 2018, paragraph 4.4.
27 Parties' Memorandum on [NSH line of research 1], 21 March 2018, paragraph 5.4.

information from Bayer – on the existence of an overlap, with the corresponding effect on the merged entity's incentives to fully pursue or instead reorient/delay/discontinue at least one of the projects post-Transaction.

(77) This conclusion is fully in line with the Commission's concern that, post-Transaction, the [NSH line of research 1] and [NSH line of research 1] projects would no longer compete head-to-head, but likely be reoriented and optimised as complementary elements of a single portfolio, and one project could possibly even be fully discontinued.

(78) Furthermore, respondents to the market investigation confirmed that a crop protection player such as BASF would likely not develop two NSH projects if they are technically very similar as is the case at stake, possibly irrespective of a significant difference in timing (which in any event does not arise in the present case):[28] '*[i]f market, size and registerability are similar, a crop protection company should select one product enough. Even if there is big gap in its launch timing, similar chemical may bring similar resistance problem*'; '*our opinion is that one of the two similar products would be eliminated. This is because the cost of bringing to market a new Active Ingredient is extremely high (+$100M), for obvious reasons of cost savings, synergies and avoid 'cannibalism': if there were two very similar products, only one would be commercialized*'; '*one of the two projects would likely fall by the wayside. Such outcome is likely regardless of timing between the two projects*'.[29]

(79) Some respondents also suggested that this could similarly be the case even where two NSH projects are technically dissimilar if they are aligned on timing, in view of the limited availability of R&D funds:[30] '*[g]enerally, if two NSH pipeline projects are different in terms of technical characteristics, SC believes that a difference in timing between the two projects would affect the likelihood of them being conducted in parallel. This is principally because the different timelines would allow the company in question to allocate funds and human resources more efficiently between the two projects*'.[31]

(80) Based on the above, the Commission considers that serious doubts arise regarding the compatibility of the Transaction with the internal market and the EEA Agreement in relation to NSH [NSH line of research 1] research.

(C) There is only a limited constraint from innovation efforts of competing players in view of high barriers to entry

(81) In *Bayer/Monsanto*, the Commission explained the differentiated innovation capabilities and incentives by category of crop protection players. In essence, it concluded that only global R&D-integrated crop protection players have full innovation capabilities, notably in view of the high barriers to entry in crop protection innovation. Other players have more limited capabilities, focused on

28 Questionnaire to Competitors (Q1), questions G.2 and G.2.1.
29 Questionnaire to Competitors (Q1), ID217, ID235 and ID272, question G.2.1.
30 Questionnaire to Competitors (Q1), questions G.3 and G.3.1.
31 Questionnaire to Competitors (Q1), ID217, question G.3.1.

discovery, development or pure generic competition, typically with a more limited ability to register and market products globally.[32]

(82) The Commission further explained in *Bayer/Monsanto* that only players which are active both in crop protection and in traits and seeds have full incentives to develop NSH lines of research for all possible uses in view of their ability to fully monetise such lines of research across all uses, including OTT use over HT crops (regarding both NSH and trait revenues).[33]

(83) Accordingly, the potential competitive constraint which a given player could constitute for the Parties in NSH innovation would to a large extent depend on these differentiated capabilities and incentives. In particular, strong potential competitive constraints could likely only be exercised by other global R&D-integrated crop protection and seed players (Bayer-Monsanto, DowDuPont and ChemChina-Syngenta). Other players could only constitute a more limited competitive constraint, likely unable to compensate the reduction of competition resulting from the Transaction.

(84) Moreover, the Parties closely monitor competitors' pipelines and patent activity, and test molecules patented by competitors to assess targets and efficacy. They gather this information through various sources such as investor presentations and patent applications from other crop protection companies. On that basis, the Parties have a good understanding of their competitors' pipelines, which allows them to reliably project future sales and determine the current value of their own pipeline projects vis-à-vis competing projects.

(85) In this case, the Parties' own internal competitive intelligence confirmed that competing R&D activity in NSH is limited, especially in the [NSH line of research 1] MoA. In particular, Figure 10 to Figure 13, describing the Parties' latest view of the industry weed management pipeline and Bayer's latest view of industry weed management patent activity, confirm that there are very few, if any, NSH projects in the industry, especially with a [NSH line of research 1] MoA, since most of the presented projects are selective herbicides.

(86) The Parties contested this finding, in essence arguing that several other players are active in NSH innovation, including in the [NSH line of research 1] MoA.[34] Similar arguments were already raised by Bayer and Monsanto in *Bayer/Monsanto* and assessed by the Commission.[35] However, BASF did not provide any new arguments or evidence supporting such alleged competition. Notably, BASF is ultimately unable to identify more than one specific NSH project from strong and independent competing global players.

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32 See Commission Decision in Case M.8084 – Bayer/Monsanto (2018), Section XI.1.4. See also the Commission Decision in Case M.7932 – Dow/DuPont (2017), Sections V.1.5, V.8.3.3 and V.8.6.

33 See Commission Decision in Case M.8084 – Bayer/Monsanto (2018), Section XI.1.4.

34 Parties' Memorandum on [NSH line of research 1], 21 March 2018, Section 5. Similar arguments were already raised by the Parties in *Bayer/Monsanto* (see Commission Decision in Case M.8084 – Bayer/Monsanto (2018), Section XI.1.4.).

35 Parties' Memorandum on [NSH line of research 1], 21 March 2018, Section 5. Similar arguments were already raised by the Parties in *Bayer/Monsanto* (see Commission Decision in Case M.8084 – Bayer/Monsanto (2018), Section XI.1.4.).

(87) Indeed, as already explained in *Bayer/Monsanto* and further illustrated in Figure 16, the specific examples of competing ([NSH line of research 1]) NSH projects appear to be limited to […]. The additional patenting activities from other players are not specifically related to any NSH project.[36]

Figure 16 – BASF's view of additional [NSH line of research 1] candidate molecules

[…]

Source: BASF's response to the Commission's request for information RFI Q32, Annex Q.16.4, page 54.

(88) […] constitutes a limited competitive constraint on global R&D-integrated players such as Bayer and BASF in view of its limited development, registration and access to market capabilities globally.[37]

(89) In addition, […].[38] […].

(90) Similarly, […]. This conclusion is consistent with the Commission's assessment in *Bayer/Monsanto* that the relevant global players for [NSH line of research 1] NSH innovation are likely limited to Bayer, […] and BASF.[39]

(91) Overall, the […] projects would thus constitute a limited competitive constraint likely unable to compensate the likely reduction of innovation competition which would result from the Transaction.

(92) In sum, from all the available information, the Commission understands that very few, if any, other players in the industry have NSH as an R&D target or pursue specific projects targeting NSH innovation spaces, especially with a [NSH line of research 1] MoA.

(93) In any event, no element on the file would contradict the Commission's conclusion that serious doubts arise regarding the compatibility of the Transaction with the internal market and the EEA Agreement in relation to NSH [NSH line of research 1] research.

(D) Conclusion

(94) For the reasons set out above and on the basis of the data made available during the investigation, the Commission therefore considers that the Transaction raises serious doubts regarding its compatibility with the internal market and the EEA Agreement by eliminating an important and close competitive constraint in relation to NSH innovation based on the [NSH line of research 1] MoA.

4.1.5.2. The Bayer Divestment Business's [NSH line of research 2] does not overlap with BASF's NSH innovation efforts

(95) In the absence of any research activities by BASF in [NSH line of research 2] or even […] – which the Commission's investigation confirmed – there is no overlap in [NSH line of research 2]/[…] R&D between the Parties.[40]

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36 See Commission Decision in Case M.8084 – Bayer/Monsanto (2018), Section XI.1.4.
37 See Commission Decision in Case M.8084 – Bayer/Monsanto (2018), Section XI.1.4.
38 See Bayer's internal document […].
39 See Commission Decision in Case M.8084 – Bayer/Monsanto (2018), Section XI.1.4.

(96) More generally, the Bayer Divestment Business's [NSH line of research 2] project targets […].

(97) On that basis, only BASF's […] chemistry could overlap with the Bayer Divestment Business's [NSH line of research 2] project, since both target […].

(98) However, those two projects are significantly different since the [NSH line of research 2] project is mainly planned as a […]. By contrast, BASF's […] is a selective molecule,[41] not targeted at any of the NSH uses planned for the [NSH line of research 2] project and likely not registrable in the EEA.

(99) These technical differences make it unlikely that the Transaction would affect innovation competition in relation to the Bayer Divestment Business's [NSH line of research 2].

(100) The Commission will accordingly not further assess possible effects of the Transaction on the Bayer Divestment Business's [NSH line of research 2].

4.1.5.3. The Bayer Divestment Business's [NSH line of research 3] does not overlap with BASF's NSH innovation efforts

(101) Similarly, there is no overlap between the Parties in [NSH line of research 3] research since the investigation confirmed that BASF and the Bayer Divestment Business are developing [NSH line of research 3] molecules for different applications: BASF's [NSH line of research 3] research is […],[42] whereas the Bayer Divestment Business is developing [NSH line of research 3] molecules for […].

(102) Indeed, the licences to Bayer's NSH lines of research included in the Bayer Divestment Business are limited to non-selective uses only and explicitly exclude any research and sales into selective uses, where Bayer retains all rights to pursue its R&D efforts.

(103) More specifically, the Bayer Divestment Business's [NSH line of research 3] project targets […].

(104) From a target use perspective, BASF's […] [NSH line of research 1] chemistry could thus overlap with the Bayer Divestment Business's [NSH line of research 3] project, […].

(105) The Commission notes that both BASF and the Bayer Divestment Business were pre-Transaction pursuing in parallel a [NSH line of research 3] and a [NSH line of research 1] for innovation in NSH (although BASF discontinued its own [NSH line of research 3] in view of […] and independently from the

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40 Form CO, chapter 6B.1, paragraph 456.

41 In *Bayer/Monsanto*, the Commission confirmed its precedents that selective and non-selective herbicides constitute separate relevant product markets (see the Commission Decision in Case M.8084 – Bayer/Monsanto (2018), Section XI.1.).

42 Form CO, chapter 6B.1, paragraph 456. See also BASF's response to the Commission's request for information RFI 10, paragraphs 3-4 and 8-9, and BASF's response to the Commission's request for information RFI Q32, Annex Q.15.3.

Transaction), thus showing the likely incentive to pursue such lines of research in parallel rather than discontinue, delay or reorient them.

(106) In the present case, one of the drivers for the incentives to develop in parallel [NSH line of research 3] and [NSH line of research 1] molecules is likely the significant difference between the two projects, deriving from the fact that they relate to different chemical classes and act with different MoAs: […] is a [NSH line of research 1] and the Bayer Divestment Business's [NSH line of research 3] project is an [NSH line of research 3].

(107) Moreover, as noted in *Bayer/Monsanto*, both Bayer and Monsanto were planning […].[43]

(108) Through the Transaction, BASF would acquire Bayer's pre-existing position in HT systems and it is likely to have, as Bayer did, an incentive to develop both an [NSH line of research 3] chemistry and a [NSH line of research 1] chemistry in parallel […].

(109) The Commission therefore considers that BASF would still have the incentive to fully pursue both the Bayer Divestment Business's [NSH line of research 3] and its own [NSH line of research 1] project as they would have been separately pursued by BASF and Bayer in the absence of the Transaction. This would particularly be the case taking into account BASF's acquisition of the corresponding HT trait research from the Bayer Divestment Business, which is tailored to the Bayer Divestment Business's [NSH line of research 3] and would not work in combination with BASF's own [NSH line of research 3] pipeline chemistry.[44]

(110) The Commission will accordingly not further assess possible effects of the Transaction on the Bayer Divestment Business's [NSH line of research 3].

4.1.6. Conclusion

(111) For the reasons set out above and on the basis of the data made available during the investigation, the Commission considers that the Transaction raises serious doubts regarding its compatibility with the internal market and the EEA Agreement by eliminating an important and close competitive constraint in relation to NSH innovation based on the [NSH line of research 1] MoA.

4.2. Traits

4.2.1. Introduction

(112) Plant 'traits' are phenotyping characteristics of a plant, such as yield, early maturing, height, herbicide tolerance, insect or disease resistance, etc.

(113) Historically, a plant trait referred to a characteristic of a plant obtained via natural breeding. Today, breeders have additional tools to provide a plant with

[43] See the Commission Decision in Case M.8084 – Bayer/Monsanto (2018), Section XI.1.
[44] Form CO, chapter 6B.1, paragraph 456.

desired characteristics such as the use of genetically modified ('GM') traits.[45] Developers of GM traits identify a desired trait (for instance drought resistance) and the corresponding gene(s). This gene can then be transformed into test lines, characterised and later introgressed into elite germplasm[46] for variety development.

(114) Traits can also be developed by prompting genetic mutations using, for example, chemical/radiological methods (thus creating a so-called 'non-GM' trait). BASF's Clearfield trait, which confers herbicide tolerance to certain imidazolinones ('IMIs'),[47] is one example of such a non-GM trait.

(115) The most prevalent types of traits are:

(a) Traits conferring tolerance to a given herbicide, often referred to as herbicide tolerance ('HT') traits. For farmers, these traits, in combination with the related herbicide(s), can represent an element of so-called 'weed management' (see Section 4.1). The most common and wide-spread HT trait confers tolerance to glyphosate, a NSH; and

(b) Traits conferring resistance to insect species. These traits are often referred to as insect resistance ('IR') traits, and represent for farmers an alternative to insecticides.

(116) In recent years, some firms have also developed a number of other traits providing additional desired characteristics. The designation of those trait categories can vary from firm to firm. Based mainly on the classification employed by the Bayer Divestment Business, the following categories can be distinguished:[48] [49]

(a) Disease resistance ('DR') traits: traits that confer specific resistance to selected diseases, such as virus diseases, scab, fusarium, rust, tan spot, septoria, etc.;

(b) Crop efficiency ('CE') traits: traits that (i) improve yield (including traits that allow a better nutrient uptake), (ii) enhance or preserve plant health, or (iii) mitigate abiotic stresses, for instance drought or salinity stress; and

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45 For the purpose of the present Decision, the definition provided in Article 2(2) of Directive 2001/18/EC of the European Parliament and of the Council of 12 March 2001 on the deliberate release into the environment of genetically modified organisms and repealing Council Directive 90/220/EEC, OJ L 106, 17.4.2001, p. 1, is employed, i.e. "*Genetically Modified Organism (GMO)' means an organism, with the exception of human beings, in which the genetic material has been altered in a way that does not occur naturally by mating and/or natural recombination*', where 'organism' means '*any biological entity capable of replicating or of transferring genetic material*'.

46 Elite germplasm is the germplasm used for the development of varieties that are already commercialised or planned to be commercialised in the near future.

47 Imidazolinones are a chemical class of herbicides.

48 Parties" response to the M.8084 Commission"s request for information RFI 35, questions 7 and 8.

49 BASF uses different nomenclatures, compared to the Bayer Divestment Business. The Commission considers that, for the purpose of the present Decision, BASF's definitions of Fungal Resistance, Yield & Stress, and Output traits are equivalent to, respectively, Disease Resistance, Crop Efficiency, and Quality traits.

(c) Quality traits: traits that produce a modified and differentiated crop when compared to the basic one, for example a modified oil/fatty acid profile in soybeans. Quality traits are generally developed to service a specific consumer/processor demand.

(117) Traits can be stacked together, thus forming a 'stack', a group of traits introgressed in the same seed variety. For example, the Bayer Divestment Business's Balance GT stack is composed of two HT traits, one providing resistance to glyphosate and the other to isoxaflutole.

(118) Trait monetisation can occur in two different ways: (i) through licensing of the finished trait or stack to seed breeders, or through sales of own seeds containing the finished trait or stack; and (ii) through licensing of the technology bearing the underlying gene from which a trait for a certain variety can be developed.

(119) GM trait development and commercialisation require, among other requirements, (i) elite germplasm and (ii) broad testing areas. The main reason for having both requirements is that the introgression of a GM trait into a variety might lead to a number of unwanted, negative effects, such as a yield reduction or a change of the germination time. Thus, extensive tests on elite traited germplasm are required.

(120) Therefore, a company like BASF, which pre-Transaction did not have a seed business and did not own elite germplasm, cannot develop and commercialise GM traits. It can therefore only monetise its GM innovation efforts by out-licensing the technology bearing the underlying genes.

(121) Moreover, different industry players have different business models: a non-integrated company like BASF engages in early trait innovation activities in view of licensing the results to seed and trait players, whereas the integrated crop protection and seed players DowDuPont, Bayer-Monsanto and ChemChina-Syngenta typically develop traits from discovery to commercialisation in-house for use in their own seeds (in addition to licensing to third party seed players). Competition in trait innovation between these companies with different business models and innovation activities is therefore less strong than it is among companies with the same business model and innovation activities.

(122) In contrast, the requirements for bringing a non-GM trait to the point of commercialisation are substantially simpler than for GM traits. This is because the unwanted effects mentioned in paragraph (119) are much more limited, thus requiring less extensive tests, which, in most cases, can be executed on non-elite germplasm.[50]

(123) Therefore, a trait innovator with no seed activities (such as BASF pre-Transaction) is able to develop non-GM traits and to bring the complete, commercially ready technology to market through other seed companies – including small seed companies.[51]

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50 BASF's response to the Commission's request for information RFI 5, question 2, paragraph 6.

51 BASF's response to the Commission's request for information RFI 5, question 2, paragraph 3.

4.2.2. Activities of the Parties

4.2.2.1. BASF

(124) BASF is active in non-GM trait research and development. Moreover, BASF is active in trait innovation that can be developed into GM traits.

(125) As it does not have a seed business pre-Transaction, BASF must rely on others to develop the genes it discovers into commercial GM traits. Therefore, for GM traits, BASF is only active as regards innovation, with no or very limited activities in actual development. Indeed, BASF typically only provides support and knowledge transfer to a trait development partner.

(126) In contrast, for non-GM traits, BASF develops commercial traits, ready to be introgressed by a seed company that in-licenses them.[52]

(127) Therefore, for non-GM traits, BASF can monetise its innovation efforts by out-licensing the fully developed traits, whereas for GM traits, BASF monetises its trait innovation activities by out-licensing the underlying technologies to trait developers. In addition to trait licence fees, in the case of HT traits, BASF monetises its GM trait innovation efforts through the sales of the associated herbicides.[53]

(128) The only two commercial trait products owned by BASF are non-GM, namely (i) *Clearfield* and (ii) *Duo Maize System / POAST Protected Corn*.[54] Further details about each trait are set out below.

(a) **Clearfield.** Clearfield is a non-GM HT trait conferring resistance to IMIs. Clearfield is available for rice, OSR, wheat, sunflower, corn, barley and lentils. The vast majority (approximately […]) of BASF's Clearfield income is derived from […] seeds. Clearfield is licensed to third-party seed partners, who independently set the price of the Clearfield-traited seeds for growers. Clearfield over-the-top patents have expired in most jurisdictions and will expire by 2023 in all other jurisdictions. IMIs are also off-patent and face a large number of generic competitors. […].

(b) **Duo Maize System / POAST Protected Corn**. BASF offers two non-GM traits which confer tolerance to ACCase-inhibitor herbicides in corn. The Duo Maize System is marketed in Europe and the POAST Protected Corn is marketed in the United States. Both traits were launched in 1996 and are planted on a very small number of acres ([…] hectares in 2016)[55]. BASF generates […] from licensing them.

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52 In the Form CO, BASF's view is that BASF is only active in the gene discoveries. However, further evidence, such as the BASF's response to the Commission's request for information RFI 5, question 2, indicates that, for non-GM traits, BASF is active as a trait developer. In developing non-GM traits, the need for owning an elite germplasm is reduced, compared to GM traits.

53 Form CO, chapter 6A, paragraph 260.

54 BASF also had a GM HT trait for soybean for the Brazilian market called 'Cultivance', which was co-developed with Embrapa. Cultivance never reached the market […].

55 Form CO, paragraph 278.

(129) Moreover BASF collaborates with Monsanto for the development of the following commercial GM traits:

(a) **Yield and Stress traits**:[56] This cooperation began in 2007, with the purpose of developing traits that enhance yield and stress tolerance across a range of target crops. So far, DroughtGard for corn is the only registered trait resulting from this collaboration. BASF's role in this cooperation is […].

(b) **Dicamba cooperation.** In 2016, Monsanto launched the first seeds containing the dicamba-tolerance ('DT') trait under the brand name 'Xtend'. Xtend is currently commercialised by Monsanto and its licensees in cotton (trait name: 'Xtendflex') and soybean seeds (trait name: 'RR2 Xtend'), both in North America only. Monsanto owns the Xtend trait, which also retains all the commercialisation and marketing rights. However, […][57] […][58] […].

(130) Regarding the trait development process, BASF considers six phases in the process of discovery, development and market launch of a new trait, namely: Phase 0 (Discovery), Phase 1 (Proof of concept), Phase 2 (Early development), Phase 3 (Late development), Phase 4 (Pre-launch), and Phase 5 (Launch). Details of each phase are described in Table 3.

(131) For GM traits, BASF is active in Phase 0 and Phase 1, whereas its seed partners are mainly active in Phases 2 to Phase 5. For non-GM traits, the role of seed partners is much reduced, and BASF is also active in Phases 2 to 5.[59]

Table 3 – BASF pipeline phases

	Phase	Definition	Description criteria
[…]	[…]	[…]	[…]
	[…]	[…]	[…]
[…]	[…]	[…]	[…]
	[…]	[…]	[…]
	[…]	[…]	[…]
	[…]	[…]	[…]

Source: *Form CO, paragraph (251).*

(132) BASF's trait innovation activities on GM and non-GM traits focus on four trait functionalities: […].[60]

(a) […].

(b) […].

56 As indicated in paragraph (116), the Yield & Stress nomenclature is equivalent to Crop Efficiency.

57 […].

58 […].

59 BASF provided more detailed differences of its GM and non-GM pipeline phases in BASF's response to the Commission's request for information RFI 5, question 2, paragraph 7.

60 For the equivalent definitions used by BASF in the ordinary course of business, please refer to paragraph (116).

Table 4 – BASF's pipeline projects on herbicide tolerance traits

Trait name	Associated Herbicide's Mode of Action	GM or non-GM?	Crops	Pipeline phase	Comment
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]

Source: Form CO, paragraph 290.

(c) […].[61]

(d) […].

(133) […].

4.2.2.2. Bayer Divestment Business

(134) The Bayer Divestment Business includes: (i) a portfolio of Bayer's commercial GM traits; (ii) a pipeline of GM traits for cotton, soybean, OSR and corn; and (iii) a pipeline of non-GM traits for wheat.

(135) The Bayer Divestment Business commercialises its GM traits in three ways: (i) sales of own seeds bearing the traits; (ii) licensing of the traits to third-party seed breeders or stack developers who use the traits separately or in combination with other traits (i.e. stacked traits); and (iii) licensing of the underlying gene to trait developers to enable them to make their own traits or use the gene in research. This last case is particularly applicable for the LibertyLink gene, 'bar/pat'.

(136) The following main GM commercial traits are part of the Bayer Divestment Business portfolio:

(a) **LibertyLink**, an HT trait providing tolerance to glufosinate ammonium. LibertyLink is available for several crops, including cotton, OSR, soybean and corn.

(b) **Glytol**, an HT trait providing tolerance to glyphosate in cotton.

(c) **Pod shatter** trait for OSR, a crop efficiency trait that reduces pod shattering of OSR varieties.

(d) **Trait stacks** incorporating LibertyLink and Glytol, both in combination with each other (for instance the LibertyLink Glytol stack in cotton) and in combination with other traits, for instance the IR Lepidoptera trait which confers resistance to a range of insects. At present, the Bayer Divestment Business commercialises trait stacks only for cotton (these contain various combinations of HT and IR traits) and in InVigor branded hybrid OSR.

[61] […].

(137) Unlike BASF, the Bayer Divestment Business has sufficient know-how, capabilities and business assets to execute all the pipeline phases and to further introgress the resulting traits into its own seed varieties. This, however, does not exclude that some traits or stacks of traits were developed in cooperation with other companies.

(138) Regarding the trait development process, the Bayer Divestment Business has a five-stage pipeline process, as described in Table 5.

Table 5 – The Bayer Divestment Business pipeline phases

Phase	Definition	Description criteria
[...]	[...]	[...]
[...]	[...]	[...]
[...]	[...]	[...]
[...]	[...]	[...]
[...]	[...]	[...]

Source: Parties' to the M.8084 Commission's response to RFI 36, [Annex 36.1].

(139) The Bayer Divestment Business has a pipeline of development projects for single traits and stacks. The single traits include i) HT traits for cotton, OSR, soybean and wheat; and ii) DR traits for soybean. The Bayer Divestment Business is also developing stacks of HT traits for new chemistries, as well as stacks combining HT traits with IR traits.

4.2.2.3. Overlaps between BASF and Bayer Divestment Business

(140) In identifying overlaps, the Commission distinguishes between commercial traits, which are licensed to seed companies and stack developers, and pipeline projects, which are traits that are not fully developed and are not commercially available.

(141) Regarding commercial traits, there are two overlaps between BASF and Bayer Divestment Business:

(a) BASF's Clearfield for corn and Duo Maize System / POAST Protected Corn, which both overlap with Bayer Divestment Business's LibertyLink for corn,

(b) BASF's Clearfield for OSR, which overlaps with Bayer Divestment Business's LibertyLink for OSR.

(142) Regarding pipeline projects, both BASF and Bayer Divestment Business are active, to different extents, in research and development of GM HT traits for cotton, soybean and OSR, and in research and development of GM DR traits for soybean.

(143) BASF is not active in activities regarding innovation or development and licensing for stacks, thus no overlap exists in this respect.

4.2.3. Market definition

4.2.3.1. Product market definition

(A) Commission precedents

(144) In its most recent precedent,[62] the Commission concluded that trait development and licensing is a separate product market, upstream from the markets for the breeding and commercialisation of seeds.

(145) In that decision, the Commission also considered that there appear to be three activities relating to the research, development and licensing of traits, all of which are upstream of the seeds markets:[63]

(a) **Trait discoveries licensing,** from which traits can be developed, which is the discovery and initial validation of the underlying trait genes, which are out-licensed to trait developers. The Commission considered that the trait discoveries licensing activities did not constitute a separate product market because these activities concern research and early development, and are to be treated as innovation spaces. The Commission concluded that innovation competition takes place in spaces consisting of groupings of crop/functionality combinations,[64] such as HT in soybean, DR in soybean, or IR in cotton.

(b) **Single trait licensing**, for which the Commission concluded that separate product markets were to be distinguished on the basis of the functionality of the relevant trait (e.g. HT, IR etc.) and crop in which it is introgressed; and

(c) **Stack licensing**, for which the Commission concluded that separate product markets exist for each crop (but not for each functionality).[65]

(146) With respect to the definition of the innovation space for traits, the Commission concluded that innovation competition takes place in spaces consisting of groupings of crop/functionality combinations,[66] such as HT in soybean, DR in soybean, or IR in cotton.

(147) In defining the product markets for single trait licensing and for stack licensing, the Commission did not distinguish between GM and non-GM.[67]

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62 Commission Decision in Case M.8084 – Bayer/ Monsanto (2018), recital 864.

63 Commission Decision in Case M.8084 – Bayer/Monsanto (2018), recitals 866 – 873.

64 Commission Decision in Case M.8084 – Bayer/ Monsanto (2018), recital 1015.

65 For stacks, there is no split by functionality, as it is in the nature of stacks to have several functions (e.g. tolerance to one or more herbicides and/or one or more insecticides).

66 Commission Decision in Case M.8084 – Bayer/ Monsanto (2018), recital 1015.

67 In Commission Decision in Case M.8084 – Bayer/ Monsanto (2018), none of the affected markets included non-GM single traits or stacks with at least one non-GM trait. Regarding innovation spaces, the parties activities were considered to compete closely if they both focused on GM or on non-GM traits (see for example Section X.1.7.5.7 regarding non-GM traits for wheat).

(B) Notifying Party's views

(148) The Notifying Party considers that trait discoveries licensing should not be considered as an innovation space, but rather a separate product market. According to the Notifying Party, this is because several companies, research institutes and universities are active in trait discoveries and typically monetise their efforts through licensing agreements with trait developers.

(C) Commission assessment

(149) In light of its precedents and in the absence of new elements, the Commission concludes that the development and licensing of traits constitutes a separate product market, upstream from the markets for the breeding and commercialisation of seeds. The Commission also confirms that three activities related to traits can be distinguished, namely: i) trait discoveries licensing from which traits can be developed; ii) single traits licensing; and iii) stacks licensing.

(150) In line with its precedents,[68] the Commission notes that there are several players active in the licensing of trait discoveries, which monetise their research efforts through the licensing of their intellectual property rights, but it confirms that trait discoveries should be not be treated as a product markets, but rather as innovation spaces.

(151) Indeed, the Commission also notes that trait discoveries licensing activities are related to research or early development of traits, which, in the case of GM traits, are further developed and eventually brought to the market by a limited number of firms. Therefore, it is appropriate to consider the discovery of genes as a research or early discovery part of the trait research and development, irrespectively of whether this is conducted in-house by a trait developer or in cooperation with third parties.

(152) Therefore, the Commission considers that trait innovation and its outcomes, including trait discoveries licensing, should not be understood as a market in its own right, but as an input activity for the trait development and licensing market, which is upstream from the seeds markets.[69] Such input activity is characterised by innovation spaces consisting of groupings of crop/functionality combinations such as, for example, HT in soybean, DR in soybean, or IR in cotton.

(153) Regarding single trait licensing, the Commission considers that separate product markets are to be distinguished as combinations of crops and functionalities (e.g. HT trait for soybean). Further sub-segments are also to be distinguished for the IR functionality.

(154) Also for stack licensing, the Commission considers that separate product markets are to be distinguished by crops, for instance stacks for soybean or stacks for cotton.

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68 See for example, M.8084 – Bayer/ Monsanto (2018), Section X.1.4.4.

69 Commission Decision in Case M.8084 – Bayer/Monsanto (2018), recital 1023.

(D) Conclusion

(155) The Commission confirms its findings in a previous case[70] and considers that there are three different activities relating to traits, all of which are upstream of seed markets, namely: i) trait discoveries licensing from which traits can be developed; ii) single traits licensing; and iii) stacks licensing.

(156) Trait discoveries licensing is characterised by innovation spaces consisting of groupings of crop/functionality combinations such as HT in soybean, DR in soybean, or IR in cotton.

(157) Within single trait licensing, separate markets need to be distinguished by crop and functionality. In the case of IR traits, sub-segments also apply (e.g. IR Lepidoptera for cotton).

(158) Finally, within stacks licensing separate markets are to be identified by crop.

4.2.3.2. Geographic market definition

(A) Commission precedent

(159) In its most recent precedent, the Commission considered that the relevant geographic markets for single trait licensing, and stack licensing are global.[71] Innovation on traits (including traits discoveries licensing) also takes place on a global basis, because innovation efforts are rolled-out in all possible geographies across the globe.[72]

(B) Notifying Party's view

(160) The Notifying Party agrees that the geographic scope of trait-related markets is global, but notes that, with one exception, no GM traits are approved for cultivation in the EEA and it is unlikely that further GM traits will become available in the EEA in the foreseeable future.

(C) Commission assessment

(161) In light of its precedents and in the absence of new elements, the Commission considers that the relevant geographic markets for single trait licensing, stack licensing, as well as innovation in traits are global.

(162) This conclusion is supported by the fact that activities associated with the trait value chain (from innovation to marketing and commercialisation) are conducted on a global level, and the sole activity that is narrower than global is the trait introgression process, which is a breeding process and, as such, is neither part of the innovation, nor of the development and licensing of traits.

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70 Commission Decision in Case M.8084 – Bayer/Monsanto (2018), Section X.1.4.9.

71 Commission Decision in Case M.8084 – Bayer/Monsanto (2018), Section X.1.5.3 and recitals 836-844.

72 Commission Decision in Case M.8084 – Bayer/Monsanto (2018), recital 1024.

(D) Conclusion

(163) The Commission confirms its findings in a previous case[73] and considers that the relevant geographic markets for single trait licensing, stack licensing as well as innovation in traits (including traits discoveries licensing) are global.

4.2.4. Competitive assessment: price/ product competition in HT traits

4.2.4.1. Notifying Party's view

(164) The Notifying Party submits that the only overlap regarding the development and licensing of traits (i.e. of existing products) occurs in HT single traits for corn and OSR. More specifically, the licensing of BASF's Clearfield overlaps with that of the Bayer Divestment Business's Liberty Link in corn and in OSR. However, the Notifying Party's view is that the overlap does not raise competition concerns.

4.2.4.2. Commission assessment

(165) The Commission agrees with the Notifying Party's view that existing product overlaps occur in the markets for the licensing of HT single traits for corn and OSR. In particular, the licensing of the Bayer Divestment Business's Liberty Link for corn overlaps with that of BASF's Clearfield for corn and Duo Maize System/ POAST Protected Corn. With respect to HT traits for OSR, BASF's Clearfield for OSR overlaps with the Bayer Divestment Business's Liberty Link for OSR.

(A) BASF's HT single traits for corn are not close or important competitors to Bayer's Divestment Business's HT single traits

(166) In corn, BASF's Clearfield and Duo Maize System/ POAST Protected Corn have a very limited market presence and penetration rate. In 2016, Clearfield was present in corn varieties covering only […] hectares of land worldwide and Duo Maize System/ POAST Protected Corn were planted in […] hectares of land worldwide. BASF's HT traits for corn represent a […] share of the […] million hectares planted worldwide in 2016 with corn varieties carrying at least one HT trait. The Bayer Divestment Business's HT traits for corn are carried by crops planted on […] million hectares worldwide (2016). Monsanto's and DowDuPont's HT traits for corn are instead present in, respectively, more than 62.5 million hectares and more than 46.5 million hectares (2016) (Table 6).

[73] Commission Decision in Case M.8084 – Bayer/Monsanto (2018), Section X.1.5.4.

Table 6 – Area presence and shares of HT traits worldwide

Company	2014		2015		2016	
	Area presence ('000 ha)	Area share (%)	Area presence ('000 ha)	Area share (%)	Area presence ('000 ha)	Area share (%)
BASF	[…]	[0-5]%	[…]	[0-5]%	[…]	[0-5]%
Divestment Business	[…]	[10-20]%	[…]	[10-20]%	[…]	[10-20]%
Combined	*[…]*	*[10-20]%*	*[…]*	*[10-20]%*	*[…]*	*[10-20]%*
Bayer-Monsanto (Post-Divestment Business)	[…]	[40-50]%	[…]	[40-50]%	[…]	[40-50]%
DowDuPont	[…]	[30-40]%	[…]	[30-40]%	[…]	[30-40]%
ChemChina-Syngenta	[…]	[5-10]%	[…]	[5-10]%	[…]	[5-10]%
Total	**[…]**	**100%**	**[…]**	**100%**	**[…]**	**100%**

Source: Form CO, chapter 6A.3 – traits, section G.

(167) The Commission notes that a very limited number of seed companies decided to introgress Clearfield or Duo Maize System/ POAST Protected Corn in their corn varieties.

(168) In terms of revenue shares for the licensing of single traits[74], in 2016 Monsanto's corn HT share was [60-70]%, Bayer's (i.e. Bayer's Divestment Business's) was [5-10]%, while DowDuPont's and ChemChina-Syngenta's were [20-30]% and [5-10]% respectively. These values appear to be stable throughout the entire 2014-2016 period. However, BASF's revenues for the licensing of Clearfield for corn and Duo Maize System/ POAST Protected Corn decreased from about EUR […] in 2014 to about EUR […] in 2016.[75] This indicates that it is unlikely that BASF's Clearfield for corn or Duo Maize System/ POAST Protected Corn can change their market position in the near future and become important competitors to LibertyLink for corn.

(169) Moreover, […]. This indicates that BASF is not a close or important competitor to Bayer.

(170) Consequently, the Commission considers that Clearfield and Duo Maize System/ POAST Protected Corn have very limited market presence and would post-Transaction not materially affect the position of the Bayer Divestment Business's Liberty Link for corn.

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74 In line with Commission Decision in Case M.8084 – Bayer/ Monsanto (2018), Annex 2, when a traited seed variety is sold by the same company owning the trait parts of the seed revenues are allocated to trait revenues. For example, when Bayer sells seed varieties carrying the Liberty Link trait, part of the seed revenues are allocated to the trait revenues.

75 Parties' response to the M.8084 Commission's request for information RFI 31, [Annex 31.6: MAST database].

(171) In addition to the limited impact on the market of BASF's HT traits in corn, BASF is only active in non-GM traits, whereas the Bayer Divestment Business is active in GM traits. The Parties thus appear to serve, at least to some extent, two different types of customers. For this reason, the products of BASF and of the Bayer Divestment Business do not appear to compete closely with each other.

(B) BASF's HT single trait for OSR is not a close or important competitor to Bayer's Divestment Business's HT single traits

(172) The originator value[76] of BASF's Clearfield for OSR in 2016 amounted to less than EUR […]. The total market value of HT single traits for OSR in 2016 was of about EUR […], of which Liberty Link represented [50-60]% (see Table 7).[77] Clearfield represents less than [0-5]% market share for HT traits in OSR and it is not expected that its market position would change in the near future,[78] thus its impact in this market appears to be low.

Table 7 – Market shares in OSR trait value to originators

Trait developer	Value trait 2016 (kEUR)	Market share in originator value in crop
OILSEED-RAPE/CANOLA		
BAYER	**[…]**	**[50-60]%**
Bayer HT (LL)[79]	[…]	[50-60]%
MONSANTO	**[…]**	**[40-50]%**
Monsanto HT (RR)	[…]	[40-50]%
BASF	[…]	[0-5]%
BASF HT (Clearfield)	[…]	[0-5]
Total value originator	**[…]**	**100%**

Source: Parties' response to the M.8084 Commission's request for information RFI 31, MAST database [Annex 31.6].

(173) BASF holds a somewhat higher share (approximately [5-10]%) on the basis of area presence.[80] However, BASF's low share in value indicates that BASF has

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76 In line with Commission Decision in Case M.8084 – Bayer/ Monsanto (2018), Annex 2, the originator value for the licensing market of single traits is defined as the value of a single trait retained by the single stack developer, irrespectively of weather the resulting traited seed is equipped with a single trait or with a stack or if the seed is sold by the same entity that developed the trait or by another one.

77 Parties' response to the M.8084 Commission's request for information RFI 31, MAST database [Annex 31.6].

78 Data in the Parties' response to the M.8084 Commission's request for information RFI 31, MAST database [Annex 31.6] indicate that during the period 2013-2016, the market share of BASF's Clearfield remained stable at around [0-5]%, thus suggesting that market share changes are not expected in the near future.

79 Technically, all the LibertyLink traits for Canola, are molecular stacks. For example, the event registered as MS8 appears to be a molecular stack of gene bar proving tolerance to glufosinate and the barnase gene, proving sterility. Nevertheless, since the main functionality conferred to the seed is glufosinate tolerance, and since the brand Liberty Link emphases this function, the Liberty Link trait is treated as a single trait. It should be noted that treating LibertyLink Canola as a stack would not change the main conclusions of the Commission.

80 Form CO, paragraph 324.

difficulties in monetizing its HT single traits and is in a significantly weaker competitive position than Bayer and Monsanto.

(174) Indeed, BASF's HT single traits for OSR do not compete closely to Bayer Divestment Business's LibertyLink and Bayer does not appear to benchmark, compare or collect market intelligence to any material extent regarding BASF's HT traits in OSR. This indicates that BASF is not a close or important competitor to Bayer.

(175) In addition to the limited impact on the market of BASF's HT traits in OSR, BASF is only active in non-GM traits, whereas the Bayer Divestment Business is active in GM traits. The Parties thus appear to serve, at least to some extent, two different types of customers. For this reason, the products of BASF and of the Bayer Divestment Business do not appear to compete closely with each other.

4.2.4.3. Conclusions on price/product competition in HT traits

(176) Based on the above considerations, the Commission considers that the Transaction does not raise serious doubts as to its compatibility with the internal market with respect to HT traits for corn and HT traits for OSR, because the Parties' HT single traits do not compete closely and BASF's market presence is limited.

4.2.5. Competitive assessment: innovation competition in GM HT traits

4.2.5.1. Notifying Party's view

(177) The Notifying Party argues that there are no competition concerns associated with innovation for GM HT traits because there is no overlap or, in case of overlaps, because there is no close innovation competition.

4.2.5.2. Commission assessment

(A) The Parties do not fully overlap in GM HT innovation because BASF is not active in all phases of GM trait innovation

(178) In *Bayer/Monsanto*, the Commission considered gene discovery and other early pipeline stage projects as part of the activities covered by HT trait innovation spaces.[81] In that decision, both Bayer and Monsanto were considered as leading innovators because, among other reasons: i) their past innovation has led to a number of commercially successful products currently on the market; ii) they are both fully active in all trait innovation activities, and, with respect to their pipelines, in all phases of their projects; and iii) they are both integrated players with capabilities to develop single traits and stacks and introgress them into their own varieties or to out-license them to other seed companies.

[81] In Commission Decision in Case M.8084 – Bayer/Monsanto (2018), the Commission considered in early pipeline a trait project that is still in the discovery or pre-development stage, where most of the innovation costs have still not been incurred, and with a lower likelihood of success than products in a more advanced state of development. For both Bayer and Monsanto, this definition includes projects in phase 0 to phase 2. See recitals 1016 and 1020.

(179) In *Bayer/Monsanto*, the Commission considered that BASF, contrary to Bayer and Monsanto, is a more limited player in HT trait innovation. As detailed in Section 4.2.2.1, […][82].

(180) In the Form CO, BASF confirmed the limited range of its activities in HT trait innovation, and further explained that it does not commercialise any GM HT traits.[83]

(181) The example of BASF's [NSH line of research 1] HT trait shows the limited extent of BASF's innovation activities in HT trait innovation. In that case, the […].

(182) In view of the above, the Commission confirms its conclusion in *Bayer/Monsanto* that BASF cannot be considered a full innovator in GM HT traits, contrary to Bayer-Monsanto.

(183) The Commission therefore considers that the Parties only partially overlap in GM HT trait innovation, since BASF is overall only partially active in such innovation (i.e. only in phase 0 and phase 1, and not in phase 2).

(184) For completeness, the Commission nevertheless assesses below whether the Parties' activities in GM HT innovation would be close.

(B) BASF's and the Bayer Divestment Business's activities in GM HT innovation are not close

(185) The analysis of the Parties' pipelines, research targets, lines of research as well as patent shares related to traits show that the Parties are both active in innovation for GM HT traits for cotton, soybean and OSR, although the range of their respective activities is different, as explained above.

(186) With respect to **innovation in GM HT traits for cotton, soybean and OSR,** the Parties' activities do not overlap and are in any event not close to one another. As discussed above, BASF was active until […] in [NSH line of research 3 HT genes] research, and is currently conducting research for the development of traits conferring tolerance to [NSH line of research 1] and [herbicide line of research 4] herbicides.

(187) With respect to [NSH line of research 3 HT genes], the Bayer Divestment Business is currently at an early-stage of its innovation process,[84] whereas BASF discontinued its efforts […].[85] BASF decided to discontinue its [NSH line of research 3 HT genes] innovation effort because […].[86] BASF is now developing its [NSH line of research 3] chemistry for […] and does not have

82 For the definition of the pipeline phases gene discovery and proof of concept, refer to Table 3.

83 Form CO, chapter 6A.

84 Bayer put on hold its effort in [NSH line of research 3] trait innovation when the associated herbicide candidate molecule […] was found to have toxicology issues. However, such an effort was recently resumed and planned to be continued (see Commission Decision in Case M.8084 – Bayer/Monsanto (2018), Section X.1.5.5.1). Details on the Bayer Divestment Business' efforts in [NSH line of research 3] herbicide are in Section 4.1.3.1.

85 BASF's response to the Commission's request for information RFI 12, question 3; BASF's response to the Commission's request for information RFI 8, question 1.

86 Form CO, chapter 6A, paragraph 355.

any plans to restart the effort to develop [NSH line of research 3] molecules suited for […]. Indeed, BASF considers '*unknown, but unlikely*' to find [NSH line of research 3] chemical compounds for […], considering its available intellectual property space and therefore is unlikely to relaunch its research program to develop an [NSH line of research 3 HT trait] .[87]

(188) In view of the fact that the innovation activity of BASF in [NSH line of research 3 HT traits] has stopped and it is unlikely to be re-started, it appears that there is no competition with the Bayer Divestment Business's [NSH line of research 3 HT trait] innovation effort.

(189) In relation to [NSH line of research 1 HT innovation], the early stage innovation effort of the Bayer Divestment Business is based on genes which were licensed to Bayer by BASF under a Material Testing Agreement (MTA).[88] Indeed, in line with BASF's strategy, once a gene for a GM trait is discovered and the feasibility of the GM HT trait technically validated, a partner with seed and trait development capabilities is required for bringing the eventual trait to the market. Bayer is one of the various potential partners to whom BASF licensed the gene for evaluation purposes.[89]

(190) In view of the above, the Commission considers that the activities of the Parties appear to be complementary since the discovery of the [NSH line of research 1] GM HT genes was finalised by BASF, while the development of the corresponding traits is underway by the Bayer Divestment Business and other players. The Transaction would thus not adversely affect the development of the related [NSH line of research 1] GM HT trait, nor would it affect BASF's GM HT innovation activities since these activities have ended with the identification and licensing of the relevant genes. The Transaction would rather only move in-house to BASF the testing activities and, potentially, the development and commercialisation of the resulting trait.

(191) The Commission also considered whether BASF's innovation effort in [herbicide line of research 4] traits competes with the innovation effort of the Bayer Divestment Business in [NSH line of research 3 HT traits]. The Commission concludes that there is very limited closeness in the Parties' innovation efforts because the two HT traits perform only with the associated herbicide (namely the [herbicide line of research 4] HT with the [herbicide line of research 4] chemistry and the [NSH line of research 3] HT with the [NSH line of research 3] chemistry). The related herbicides appear to be more complements than substitutes since BASF's [herbicide line of research 4] chemistry would be applied […], while the Bayer Divestment Business's [NSH line of research 3] chemistry would be applied […].[90]

(192) The Commission further notes that BASF was pre-Transaction pursuing in parallel a [NSH line of research 3 HT traits] line of research, an [herbicide line of research 4] HT line of research and a [NSH line of research 1] HT line of research (although BASF discontinued its own [NSH line of research 3] in view

87 […].
88 Form CO, chapter 6A, paragraph 294.
89 Form CO, chapter 6A, paragraph 290.
90 BASF's response to the Commission's request for information RFI 10, question 3.

of […] and independently from the Transaction). This shows the likely incentive to pursue such lines of research in parallel rather than discontinue, delay or reorient them post-Transaction.

(193) In the present case, one of the drivers for the incentives to develop in parallel [NSH line of research 3], [herbicide line of research 4] and [NSH line of research 1] HT innovation is likely the significant difference between the three projects. This derives from the fact that they relate to different chemical classes and act with different MoAs and, in some cases, target different application timings: the [herbicide line of research 4] chemistry has a […] MoA and would be used […] and the [NSH line of research 1] chemistry has a [NSH line of research 1] MoA, whereas the Bayer Divestment Business's [NSH line of research 3] project is an [NSH line of research 3] to be used […].

(194) The Commission therefore considers that BASF would have every incentive to fully pursue both the Bayer Divestment Business's [NSH line of research 3] HT line of research and its own [herbicide line of research 4] HT and [NSH line of research 1] HT projects as they would have been separately pursued by the Parties in the absence of the Transaction. This would particularly be the case taking into account BASF's acquisition of the corresponding [NSH line of research 3] NSH research from the Bayer Divestment Business, which is tailored to the Bayer Divestment Business's [NSH line of research 3] HT line of research and would not work in combination with BASF's [herbicide line of research 4] HT traits.[91]

(195) Finally, the Commission also considered potential closeness between the innovation effort of BASF in [NSH line of research 1] HT and the innovation effort of the Bayer Divestment business in [NSH line of research 3] HT. Also in this case, there is limited closeness in the Parties' innovation efforts because the two HT traits perform only with the associated herbicides (namely the [NSH line of research 1] HT with the [NSH line of research 1] chemistry and the [NSH line of research 3] HT with the [NSH line of research 3] chemistry). Moreover, the related herbicides appear to be sufficiently differentiated since they are from different chemical classes and act with different MoAs.

4.2.5.3. Conclusions on competition in GM HT trait innovation

(196) Based on the above, the Commission considers that the Transaction does not raise serious doubts as to its compatibility with the internal market with respect to innovation in GM HT traits for cotton, soybean and OSR.

4.2.6. Competitive assessment: innovation competition in GM DR traits

4.2.6.1. Notifying Party's view

(197) The Notifying Party argues that there are no competition concerns associated with innovation for GM DR traits either because there is no overlap or, in case of overlaps, because there is no close innovation competition.

[91] Form CO, chapter 6B.1, paragraph 456.

4.2.6.2. Commission assessment

(198) The Commission considers that all the arguments indicated in Section 4.2.5.2 (A) leading to the conclusion that the Parties overlap only partially in HT trait innovation also apply *mutatis mutandis* to DR trait innovation. Therefore, the activities of the Parties overlap only in part, as BASF, contrary to the Bayer Divestment Business, is not active in all DR trait innovation activities.

(199) For sake of completeness, the analysis of the Parties' pipelines, research targets, lines of research as well as patent shares related to traits show that, where a partial overlap exists, this is in DR trait innovation for soybean. More specifically, both Parties are active in innovation activities related to GM traits providing resistance to […].

(200) The Commission performed an analysis of the active patents published during the years 2007 to 2016 and found out that the citation share of the DR trait patents of large agricultural companies (namely, DowDuPont, Bayer, Monsanto, ChemChina-Syngenta and BASF) is relatively small, namely [30-40]%, compared to [90-100]% for HT traits and [90-100]% for IR traits (Table 8).

Table 8 – Trait patent analysis: shares of patent citations

Trait technology	Bayer/ Monsanto share (%)	BASF share (%)	ChemChina-Syngenta share (%)	DowDuPont share (%)	Total large agricultural companies (Bayer/ Monsanto, BASF, ChemiChina-Syngenta, and DowDuPont) (%)	Total citation	Patent sample size
Crop Efficiency	[20-30]%	[30-40]%	[0-5]%	[10-20]%	[60-70]%	[…]	[…]
Disease Resistance	[5-10]%	[10-20]%	[0-5]%	[10-20]%	[30-40]%	[…]	[…]
Insect Resistance	[40-50]%	[0-5]%	[10-20]%	[30-40]%	[90-100]%	[…]	[…]
Quality	[10-20]%	[10-20]%	[0-5]%	[40-50]%	[80-90]%	[…]	[…]
Herbicide Tolerance	[50-60]%	[5-10]%	[5-10]%	[20-30]%	[90-100]%	[…]	[…]
Enabling technologies	[20-30]%	[0-5]%	[0-5]%	[20-30]%	[50-60]%	[…]	[…]

Source: European Commission's calculations based on patent data provided by Bayer. Bayer's dataset on patents was provided under the M.8084 Bayer/ Monsanto case on 15 May 2017 in response to the Commission's request for information RFI 14, question 27 (BI 02892, 'Big6 patent analysis 6 YRS.xlsx'). An updated version was submitted in response to the Commission's request for information RFI 19, question 10 (Annex 19.3, ID1638-37).
The Commission has further extended the initial patent dataset provided by Bayer in response to the Commission's request for information RFI 19 (Annex 19.3) by including all biotech patents belonging to companies other than the global R&D integrated companies. This corresponds to the Commission's request for information RFI70.

(201) The relatively low patent citation share in DR traits for large agricultural companies (namely, DowDuPont, Bayer, Monsanto, ChemChina-Syngenta and BASF) indicates that the barriers to enter in the innovation space for DR traits are not as high as for HT and IR traits. It also indicate that other companies are active in the innovation space for DR traits, in addition to the large agricultural companies. Indeed, the remaining [60-70]% of citation share in DR traits (Table 8) refer to other organisations.

(202) The following Table 9 reports the main organisations active in DR trait innovation, including one of the large agricultural companies, DowDuPont. The list is non-exhaustive, but it shows that a number of other players are active in this field.

Table 9 – Main organisations innovating in DR traits

Organisation name	Description of activities in DR traits	Type of activities
DowDuPont	For GM traits, DowDuPont has identified a major resistance gene from pigeon pea, and their discovery approach might deliver additional genes for combination. DowDuPont has also entered into a collaboration with Evogene, but details of the cooperation are not known. DowDuPont also appears to be applying CRISPR-CAS technology on native traits as part of a platform aimed at developing ASR solutions.	Innovation: currently on Phase 1 for the GM trait (field testing in Brazil expected 207/2018); phase 0 for the cooperation with Evogene and CRISPR-CAS
Embrapa	Embrapa is not engaged in ASR resistance traits research but has breeding activities focused on classical ASR resistance genes. Embrapa claims to have identified a new resistance gene in a wild soybean variety. However, there is no significant resistance in Embrapa lines so far.	Innovation
Evogene	Evogene is engaged in trait discovery activities, but details are not known.	Innovation: Phase 0 – laboratory testing
Norwich Rust Group	Norwich Rust Group (which includes the 2Blades Foundation) is focused on gene discovery for resistance to rust diseases of various crops. BASF considers that Norwich Rust Group is probably its most significant competitor in relation to gene discovery for ASR resistance. 2Blades Foundation is also engaged in trait discovery activities and has also has a collaboration with DowDuPont on the development of an R-gene stack to increase durability	Innovation: like BASF, Norwich Rust Group does not own elite germplasm, thus it requires partners for trait development.
RWTH Aachen University	RWTH Aachen University is engaged in trait discovery activities, but no details are known.	Innovation : Phase 0 – laboratory testing.

Organisation name	Description of activities in DR traits	Type of activities
ChemChina-Syngenta	ChemChina/Syngenta appears to have DR GM traits in early development. ChemChina/Syngenta also claims to have launched a native ASR partial resistance trait in 2014, though the Notifying Party has not seen evidence of this trait / line on the market.	Innovation: the GM DR trait activity is in early-phase of development.
TMG	TMG is a Brazilian soybean breeder with strong ASR breeding activities (native traits). TMG also has varieties on the market (the Inox line) which contain a classical native resistance gene.	Innovation and development of native traits.

Source: European Commission analysis, based on the Notifying Party's response to the Commission's request for Information RFI 7, question 1 and Annex 4.

4.2.6.3. Conclusion on innovation competition in GM DR traits

(203) Based on the above and in particular BASF's limited innovation activities as well as the significant number of competing innovators, the Commission considers that the Transaction does not raise serious doubts as to its compatibility with the internal market with respect to innovation in DR traits for soybean.

4.2.7. Conclusion on traits

(204) Based on the above, the Commission considers that the Transaction does not raise serious doubts as to its compatibility with the internal market with respect to price/product competition and innovation competition in traits.

4.3. Seed treatment

4.3.1. Introduction

(205) Seed treatment is the treatment (or dressing) of seeds with specific formulations to protect them in the early stages of their development. Seeds are dressed before they are planted. Seed treatment products are used for all major row crops such as cereals, corn, OSR, sunflower or sugar beet.

(206) Seed treatment products can be distinguished on the basis of their target in fungicides, insecticides and nematicides. Seed treatment products can also consist of combinations of fungicides, insecticides and nematicides.

(207) Fungicidal and insecticidal seed treatments target respectively seed- or soil-borne diseases (fungicidal seed treatment) or soil-dwelling or early season insects (insecticidal seed treatment). Nematicidal seed treatments protect plants from nematodes, which are microscopic roundworms that live in many habitats and often exceed a million per square metre. They are found in nearly all climates and soil types. Nematodes can cause severe economic damage to crops.

They secure themselves to the plant tissue and suck nutrition from it, which therefore negatively affects plant yield.[92]

(208) Since most nematodes live in the soil, they represent one of the most difficult pest problems to identify and control. It has been estimated that some 10% of world crop production is lost because of plant nematode damage.[93]

(209) Seed treatment formulations are based on the same active ingredients which are also used for the formulation of nematicides, insecticides and fungicides for foliar/soil crop protection. However, they contain additional specific inert ingredients such as additives, polymers, anti-freezing agents, dyes or pigments, in order to ensure that the dressed seeds are marked as such or the seed dressing sticks to the seeds. The active ingredients in seed treatments can be chemical or biological.

(210) In the EEA, seed treatment producers sell their products mainly to seed companies but also – to a limited extent – to wholesalers, dealers/co-operatives or directly to large growers.[94]

4.3.2. Market definition

4.3.2.1. Product Market Definition

(A) Commission precedents

(211) In previous cases,[95] the Commission considered that seed treatment constitutes a separate product market rather than a particular type of application of crop protection products because they target different pests, and the customers and distribution channels are not identical as they are generally sold to seed companies whereas other crop protection products are sold to distributors and are applied by growers.

(212) Seed treatment has been further divided by crop and by indication (e.g. fungicidal, insecticidal). Nematicidal seed treatments constitute an additional segment to fungicidal and insecticidal seed treatments.[96]

(213) As regards the seeds market that is downstream to seed treatment, the Commission has referred in previous decisions to the existence of a separate product market for treated seeds, but did not ultimately reach a conclusion on the market definition of treated seeds.[97]

92 Commission Decision in Case M.8084 – Bayer/Monsanto (2018), recital 2067.
93 Commission Decision in Case M.8084 – Bayer/Monsanto (2018), recital 2068.
94 Form CO, chapter 6B.3, paragraph 525.
95 Commission Decision in Case M.8084 – Bayer/Monsanto (2018), Section X.I.2.2.1, and cases referred to in that decision.
96 Commission Decision in Case M.8084 – Bayer/Monsanto (2018), Section X.I.2.2.1, and cases referred to in that decision, and cases referred to in that decision.
97 Commission Decision in Case M.8084 – Bayer/Monsanto (2018), Section X.I.2.2.1.3.

(B) Notifying Party's views

(214) In line with the Commission's precedents, the Notifying Party has submitted data on the basis of a seed treatment product market divided by indication and by crop.[98]

(C) Commission assessment

(215) In light of its precedents and in the absence of new elements,[99] the Commission is of the view that seed treatments should be divided by crop and indication. Nematicidal seed treatments constitute an additional segment to fungicidal and insecticidal seed treatments.

(216) The Commission does not consider that it is appropriate to further segment the nematicidal seed treatment market into biological and chemical nematicidal seed treatments because it is clear from the Parties' internal documents that chemical and biological nematicidal seed treatments compete with one another for the same end uses. For example, [extract from BASF internal document].[100]

(217) As regards the seeds market that is downstream to seed treatment, the Commission considers, in line with its precedents[101], that treated seeds constitute a separate market. However, for the purpose of this decision, it can be left open whether the product market includes also untreated seeds since the Transaction does not give rise to concerns about its compatibility with the internal market with respect to treated seeds under any plausible market definition.

(D) Conclusion

(218) As regards nematicidal seed treatment, the Commission concludes that the relevant product market to retain for the competitive analysis is seed treatment for nematode control on a crop by crop basis.

(219) As regards insecticidal and fungicidal seed treatment, the Commission considers that separate product markets exist for insecticidal or fungicidal seed treatment market, which are both further segmented on a crop by crop and pest or disease basis.

(220) As regards the downstream market to the seed treatment markets, for the purpose of this Decision, the Commission considers that treated seeds constitute a separate market but it can be left open whether this includes also untreated seeds since the Transaction does not give rise to concerns about its compatibility with the internal market under any plausible market definition.

98 Form CO, chapter 6B.3, paragraphs 535-536.

99 Commission Decision in Case M.8084 – Bayer/Monsanto (2018), Section X.I.2.2.1 and cases referred to in that decision.

100 BASF's response to the M.8084 Commission's request for information to BASF RFI Q23, [Annex 8.z.1: […]].

101 Commission Decision in Case M.8084 – Bayer/Monsanto (2018), Section X.I.2.2.1.3 and cases referred to in that decision.

4.3.2.2. Geographic market definition

(A) Commission precedents

(221) In previous cases, the Commission considered that the relevant geographic market for seeds and seed treatment[102] is national in scope.

(B) Notifying Party's views

(222) In line with the Commission's precedents, the Notifying Party has submitted data on the basis of a national segmentation of insecticidal and fungicidal seed treatment on a crop by crop basis.[103]

(C) Commission assessment

(223) In light of its precedents[104] and in the absence of new elements, the Commission considers that seed treatment product markets and seeds markets are national in geographic scope.

(D) Conclusion

(224) In light of the above, the Commission concludes that seed treatment product markets and seeds markets are national in geographic scope.

4.3.3. Activities of the Parties

(225) BASF is active in insecticidal and fungicidal seed treatment and has a nematicidal seed treatment product in the pipeline. The Bayer Divestment Business includes a number of nematicidal seed treatment products, including nematicidal seed treatment pipeline products, an insecticidal seed treatment product, as well as seeds.

4.3.3.1. BASF's activities in seed treatment

(226) BASF is active in insecticidal and fungicidal seed treatment. Its insecticidal seed treatment portfolio includes one product branded as MUNDIAL ([…][*]), sold only in the Netherlands for use on onions, garlic and vegetables.[105] MUNDIAL's sales are due to cease in the EEA. BASF has chosen not to re-register the product in the Netherlands, as use of fipronil was restricted by EU authorities.[106]

(227) BASF's portfolio of fungicidal seed treatments includes products for use on cereals commercialized in several EEA countries, as well as fungicidal seed treatment authorised for use on OSR in Germany (Acrobat WP (dimethomorph))

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102 Commission Decision in Case M.8084 – Bayer/Monsanto (2018), Section X.I.2.2.2 and cases referred to in that decision.

103 Form CO, chapter 6B.3, paragraphs 535 – 536.

104 Commission Decision in Case M.8084 – Bayer/Monsanto (2018), Section X.I.2.2.2, and cases referred to in that decision.

* Should read: "fipronil".

105 Form CO, chapter 6B.3, Table BASF EEA […] seed treatment portfolio, at paragraph 550.

106 BASF 5(3) Submission, paragraph 45.

and fungicidal seed treatment products for use on ornamentals, onion/garlic, and vegetables in the Netherlands.[107]

(228) BASF also has a pipeline biological nematicidal control product, Trunemco, whose two active components are bacillus amyloliquefaciens, and a semio chemical, cis-jasmone. In terms of nematode action, Trunemco primes plant physiology and stimulates the defence system of plants in order to protect the plant from nematodes, rather than killing the nematodes (as a chemical nematicide would do).[108] Trunemco is expected to be launched in the US in 2019 and in the EEA around […].[109] Globally, Trunemco's target crops are corn, soybean and cotton.[110] In the EEA, BASF plans to first launch Trunemco on […].[111]

4.3.3.2. Bayer Divestment Business' activities in seed treatment

(229) The Bayer Divestment Business includes the data, know-how, employees, intellectual property, registrations, sales and marketing assets, and contracts comprising Bayer's nematicidal/insecticidal seed treatment businesses Poncho, VOTiVO, Poncho/VOTiVO, Poncho/VOTiVO 2.0, ILeVO, COPeO and Bayer's nematicidal seed treatment pipeline products VOTiVO/Redigo M (*Bacillus firmus*/ prothioconazole/ metalaxyl) and […]. The Bayer Divestment Business seed treatment assets generated a turnover of EUR […] in 2017.

(230) While the Bayer Divestment Business' nematicide control seed treatments are not currently sold in the EEA, Bayer planned to launch its biological nematicidal seed treatment VOTiVO/Redigo M in the EEA in 2018 on corn and sugarbeet.[112] The active ingredient in VOTiVO is a bacterium, *bacillus firmus*. Like Trunemco, VOTiVO/Redigo M is a biological nematicide which does not kill nematodes, but rather protects plants from attack by nematodes. *Bacillus firmus* has two major functions as an active ingredient: first, it protects against nematodes by perforating the outer-layer of the nematode egg and by minimizing the attractiveness of the roots for nematodes and second by strengthening the plant as such. Estimated peak sales of this product in the EEA are EUR […].[113]

(231) The Bayer Divestment Business' nematicidal seed treatment products Poncho/VOTiVO, Poncho/VOTiVO 2.0, ILeVO, COPeO are not sold in the EEA and Bayer had no plans to do so in the future.[114]

(232) The Bayer Divestment Business also includes two pipeline products which are likely to be launched in the EEA, [extract from Bayer internal document].[115,116,117,118,119]

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107 Form CO, chapter 6B.3, Table BASF EEA […] seed treatment portfolio, at paragraph 550.
108 Form CO, chapter 6B.3, paragraph 585.
109 BASF 5(3) Submission, paragraph 33, Form CO, Chapter 6B.3 at paragraphs 551 – 553.
110 BASF's response to the Commission's request for information RFI2, [Annex Q1.1 […]], slide 5.
111 Form CO, chapter 6B.3, Table BASF seed Treatment Pipeline, at paragraph 551.
112 BASF 5(3) Submission, paragraph 36.
113 Bayer's internal document BI 19366 'VOTiVO/Redigo M concept, 15 September 2017', slide 15.
114 BASF 5(3) Submission, paragraph 36.

(233) Fluopyram is a versatile active ingredient as a foliar fungicide[120] and also as a seed treatment for broad acre crops and soil nematicides for all crops.[121] It is currently sold in the US and other countries outside the EEA under the brand name ILeVO. Fluopyram is not currently sold as a nematicidal seed treatment in [extract from Bayer internal document].[122]

(234) The Bayer Divestment Business seed treatment assets include two insecticidal seed treatment products, namely (i) Poncho 600 FS, which uses the active ingredient clothianidin FS 600 G Red and is applied in the EEA in corn and sunflower; and (ii) Deter, which uses clothianidin FS 250 G and is applied in the EEA in cereals. In 2017, the former was sold in Bulgaria, France, Germany, Hungary, Romania and Spain, while the latter was sold in the Czech Republic, Slovakia and the UK.[123]

(235) The Bayer Divestment Business also includes activities which are downstream from seed treatment markets, namely vegetable and broad acre crops seeds in various EEA member states.

4.3.4. Competitive assessment in nematicidal seed treatment

4.3.4.1. Notifying Party arguments

(236) The Notifying Party's submission observes that the commitments submitted to the Commission, which includes the divestment of BASF's Trunemco, resolves any potential competition concerns by removing the horizontal overlap between Trunemco and the Bayer Divestment Business' seed treatment assets.[124]

4.3.4.2. Commission assessment

(A) Competitive landscape in nematicidal seed treatment

(237) Nematicidal seed treatment is an area where there are worldwide very few products available but where there is huge market potential. In the EEA, there are currently no nematicidal seed treatment products available at all. Consequently, the Commission considers that any products launching in the

115 Bayer's internal document BI-EDISC-0141615 'Notes, Action & Decision Summary SPC, 21 & 22 November 2016', page 11.
116 BASF 5(3) Submission, paragraph 40.
117 Bayer's internal document BI-EDISC-0141615 'Notes, Action & Decision Summary SPC, 21 & 22 November 2016', page 9.
118 Commission Decision in Case M.8084 – Bayer/Monsanto (2018), recital 2116.
119 Commission Decision in Case M.8084 – Bayer/Monsanto (2018), recital 2117.
120 The Bayer Divestment Business includes only fluopyram seed treatment applications, Bayer retains all other patents for use in non-seed treatment applications. This includes, for example, patents relating to fluopyram's use as a foliar fungicide.
121 Bayer's internal document BI 10432 […].
122 Bayer's internal document BI 10456 'Fluopyram, Maximum Use Rates, September 2017', slide 5.
123 BASF 5(3) Submission, paragraph 36. The application of Poncho 600 FS in flowering crops including corn and sunflower is restricted pursuant to Commission Implementing Regulation No 485/2013, and sales of this product for use in corn and sunflower are possible in the EEA only subject to derogations from relevant national authorities, Bayer expects a complete ban of clothianidin covering all of the EU to be announced in June 2018.
124 BASF 5(3) Submission, paragraph 47.

nematicidal seed treatment market are likely to have a significant competitive impact and this finding is supported by internal documents of the Parties.

(238) For example, both Bayer[125] and BASF[126] have been working on making farmers aware of the significant damage caused by nematodes and on the detrimental impact that nematodes have on yield in order to promote their new nematicidal seed treatment products. Indeed, one BASF internal document refers to Trunemco […] and marketing of nematicidal seed treatment products tend to focus on improved yield provided to growers. […].[127]

Figure 17 – BASF document referring to key benefits of Trunemco and nematicides

[…]

(239) The competitive landscape is limited. In the following internal document set out at Figure 18 below, BASF shows that there are [5-10] products globally (the Bayer Divestment Business' VOTiVO and ILeVO/COPeO, Syngenta's products Avicta and Clariva, Bayer/Monsanto's NemaStrike and Valent's Aveo) across all crops that compete with Trunemco, two of which are part of the Bayer Divestment Business (VOTiVO and ILeVO).

Figure 18 – [Extract from BASF internal document]

[…]

Source: [BASF internal document].

(240) Three of these products are based on chemical active ingredients (NemaStrike, Avicta and ILeVO/COPeO) and three are based on biological components (VOTiVO, Clariva and Aveo). […]. Bayer/Monsanto's NemaStrike will also launch in the EEA.[128]

(241) Of the remaining three products, the two Syngenta products are either not able or not likely to launch in the EEA. First, Syngenta's Clariva is for use on soybean which is not a key crop in the EEA. Second, Syngenta's Avicta product is a much older product (its first launch took place in 2006[129]) and it is based on abamectin, which, as a nematicide is currently only approved in Italy and registered only for use on vegetable crops.[130] This product cannot therefore be launched in the EEA as a nematicidal seed treatment for row crops. Finally, Valent's product Aveo is based on the same bacillus as Trunemco but on a different strain (Bacillus amyloliquefaciens, strain PTA-4838*) which targets

125 Bayer's internal document BI 19366 'VOTiVO/Redigo M concept, 15 September 2017', slide 12.

126 As can be seen from the Commission decision in Case M.8084 – Bayer/Monsanto, recital 2088-2098, Monsanto was also investing in the area of nematicidal seed treatment with NemaStrike […]. See also BASF's response to the M.8084 Commission request of information to BASF RFI Q23, [Annex Q8.z.5: […]].

127 American Phytopathological Society and Kline Nematicide Market Study 2014, as cited by BASF in BASF's response to the M.8084 Commission request of information to BASF RFI Q23, [Annex Q8.z.5: […]].

128 Commission Decision in Case M.8084 – Bayer/Monsanto (2018), recital 2098.

129 https://www.syngentaseedcare.com/avicta.

130 Regarding Abamectin see Commission Decision in Case M.7932 – Dow/DuPont (2017), recital 1602. Abamectin is registered as a nematicide only for the following vegetable crops: tomato, squash and eggplant.

soybean cyst nematodes[131] and the main target crop is therefore soybean. It has just been launched in the US, but it is unclear when and if it would come to the EEA.

(242) The Commission therefore considers that in the EEA there are likely to be either one (Bayer/Monsanto's NemaStrike), or at most two, competitors (including Valent's Aveo) to the merged entity.

(B) The Parties are each planning to launch important nematicidal seed treatment products in the EEA

(B.i) Bayer

(243) As discussed above, the Bayer Divestment Business includes a biological nematicidal seed treatment product […] called VOTiVO. […].[132] VOTiVO has however already been successfully sold in the US since 2011, together with an insecticide, under the product name 'Poncho/VOTiVO'.[133] Bayer perceives its product Poncho/VOTiVO as a market-leading product in the US. For example, Bayer notes that the product has grown to become '*the most trusted and the most utilized seed treatment in the USA*'[134], which is applied yearly on over 45 million acres of corn and which provides efficacy against major corn pests.[135] Poncho/VOTiVO itself is now being enhanced by the addition of TWO.O in the USA (Poncho/VOTiVO 2.0), which has been introduced in August 2017.

(244) [Extract from Bayer internal document].[136,137,138]

(245) [Extract from Bayer internal document].[139,140,] […]*if nematodes are of greater concern and we have data to show in a broad range of environments we provide benefit.*'[141]

(B.ii) BASF

(246) As discussed above, BASF also has a biological nematicidal seed treatment product in its pipeline, Trunemco. In trials BASF notes that it has outperformed rivals, by significantly reducing plant damage (from nematodes) and increasing yield: […]*% yield increase over current standards in corn and cotton…. Superior performance observed with* [Trunemco] *over competitors*.'[142] […].[143]

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131 https://www.valent.com/agriculture/products/aveoez/download-literature.cfm.

132 BASF 5(3) Submission, paragraph 36, M.8084 BI 19366 'VOTiVO/Redigo M concept, 15 September 2017', slide 9.

133 Commission Decision in Case M.8084 – Bayer/Monsanto (2018), recital 2082.

134 Bayer's internal document BI 08500 'SeedGrowth Biologics, Strategy Update', slide 11.

135 Bayer's internal document BI 08500 'SeedGrowth Biologics, Strategy Update', slide 11.

136 Bayer's internal document BI 19366 'VOTiVO/Redigo M concept, 15 September 2017', slide 9.

137 Bayer's internal document BI 19366 'VOTiVO/Redigo M concept, 15 September 2017', slide 7.

138 Bayer's internal document BI 19366 'VOTiVO/Redigo M concept, 15 September 2017'.

139 Bayer's internal document BI 19366 'VOTiVO/Redigo M concept, 15 September 2017', slide 15.

140 Bayer's internal document BI 19366 'VOTiVO/Redigo M concept, 15 September 2017', slide 14.

141 Bayer's internal document BI 19366 'VOTiVO/Redigo M concept, 15 September 2017', slide 14.

142 BASF's response to the M.8084 Commission request of information to BASF RFI Q23, [Annex Q8.z.5: – […] Nematode solution to the unseen yield robber].

143 BASF's response to the M.8084 Commission request of information to BASF RFI Q23, [Annex Q8.z.5: – […] Nematode solution to the unseen yield robber].

(247) Trunemco is expected to launch in […] in […] and to come to […] around […].[144]

(C) The Transaction brings together two important and close potential competitors on nematicidal seed treatment

(248) The Transaction brings together the nematicidal seed treatment products of BASF and the Bayer Divestment Business, which will be competing in a market with very few competitors.

(C.i) […]

(249) […][145] […].[146] […].

Figure 19 – [Extract from BASF internal document]

[…]

Source: [BASF internal document].

(250) […].[147]

(251) […].[148]

(C.ii) Both Trunemco and VOTiVO/RedigoM are biological products with similar methods of nematode control

(252) Both Trunemco and VOTiVO are biological products based on different types of bacteria (*bacillus amyloliquefaciens* (strain MBI 600) and *bacillus firmus* respectively). Rather than killing the nematodes outright, both products function in such a way as to repel the nematode, by protecting the plant. The Commission notes that while from a market definition perspective biological and chemical nematicidal seed treatments compete with one another for the same end uses, the biological seed treatments are likely to compete more closely with each other, than with chemical seed treatments.

(C.iii) […]

(253) Potatoes and corn are the most important crops for nematicides, globally, accounting for the largest share of nematicide sales.[149]

144 BASF Submission pursuant to Article 5(3) of Commission Regulation (EC) No 802/2004 ('BASF 5(3) Submission'), Form CO, Chapter 6B.3 at paragraphs 551 – 553.

145 BASF's response to the M.8084 Commission's request of information to BASF RFI Q23, [Annex 8.z.8 '[…] Virtual Global BVP Workshop'], slide 29.

146 BASF's response to the M.8084 Commission's request of information to BASF RFI Q23, [Annex Q8.z.1 'FCC Project Review […]'], slide 9.

147 BASF's response to the Commission request of information RFI 2, [Annex Q1.1 '[…] Project Board 2017'], slide 15.

148 BASF's response to the M.8084 Commission request of information to BASF RFI Q23, [Annex Q8.z.5: […] Nematode solution to the unseen yield robber].

149 BASF's response to the M.8084 Commission's request for information to BASF RFIQ23, [Annex Q8.y.3 'Kline Nematicide Market Study'].

(254) Globally, Trunemco's target crops are corn, soybean and cotton with an internal BASF document noting that it is: '*Driven by Seed Treatment in soybean, corn, and cotton.*'[150] These are the same main target crops as the Bayer Divestment Business portfolio.[151] […].[152]

(255) The Notifying Party submits that at present, […].[153] However, the Commission considers it likely that BASF will register […].[154]

(D) Limited competitive constraints from competitors

(256) As noted at Section 4.3.4.2.A nematicidal seed treatment is an area in which there are very few products currently competing and this competitive landscape is not expected to change in the near future.[155]

(257) The Commission therefore concludes that the competitive constraints on the merged entity are likely to be limited, since on the basis of the above assessment there appears to be just one (Bayer/Monsanto's NemaStrike), or at most two (Valent's Aveo) competitors to the merged entity.

4.3.4.3. Conclusion on nematicidal seed treatment

(258) For the reasons set out above and based on the results of its investigation, the Commission considers that serious doubts arise regarding the compatibility of the Transaction with the internal market and the EEA Agreement in relation to potential competition for nematicidal seed treatment in corn and sugar beet. In particular, the Commission considers that the Transaction would likely eliminate an important and close competitive constraint, resulting in non-coordinated effects on competition and therefore leading to a significant impediment of effective competition.

4.3.5. Insecticidal seed treatment

(259) There is no horizontal overlap between BASF's insecticide seed treatment MUNDIAL and the Bayer Divestment Business' insecticide seed treatment products because the respective products do not compete in the same crops or geographic markets in the EEA.[156]

150 BASF's response to the Commission's request for information RFI2, [Annex Q1.1: '[…] Project Board 2017'], slide 5.

151 Commission Decision in Case M.8084 – Bayer/Monsanto (2018), recital 2073.

152 Bayer's internal document BI 19366 'VOTiVO/Redigo M concept, 15 September 2017', slide 7.

153 BASF's memorandum on nematicides, page 8.

154 Form CO, chapter 6B.3, Table BASF seed Treatment Pipeline, at paragraph 551, Bayer's internal document BI 19366 'VOTiVO/Redigo M concept, 15 September 2017', slide 7.

155 Commission Decision in Case M.8084 – Bayer/Monsanto (2018), recitals 2141 to 2143.

156 BASF 5(3) Submission, paragraph 36. The application of Poncho 600 FS in flowering crops including corn and sunflower is restricted pursuant to Commission Implementing Regulation No 485/2013, and sales of this product for use in corn and sunflower are possible in the EEA only subject to derogations from relevant national authorities, Bayer expects a complete ban of clothianidin covering all of the EU to be announced in June 2018.

4.3.6. Vertical links between seed treatment (up-stream) and (treated) seeds (down-stream)

(260) According to the information provided by the Notifying Party,[157] the Transaction gives rise to a vertical relationship between the upstream supply of seed treatment products by BASF, on the one hand, and the downstream market for commercialisation of seeds by the Bayer Divestment Business, on the other, only as regards fungicidal seed treatment and OSR treated seeds in Germany. However, these markets will not be affected as a result of the Transaction. BASF has estimated market share on the upstream market of [20-30]%[158] and on the downstream market both for OSR seeds and OSR treated seeds the Bayer Divestment Business has a negligible market share ([5-10]%).[159]

(261) On the basis of the above, the Transaction does not raise serious doubts as regards its impact on the fungicidal seed treatment market and OSR treated seeds in Germany.

4.3.7. Conclusion on seed treatment

(262) The Commission considers that serious doubts arise regarding the compatibility of the Transaction with the internal market and the EEA Agreement in relation to potential competition for nematicidal seed treatment in corn and sugar beet, because it is likely that the Transaction would eliminate an important and close competitive constraint, resulting in non-coordinated effects on competition and therefore leading to a significant impediment of effective competition.

(263) The Commission does not consider that serious doubts arise regarding the compatibility of the Transaction with the internal market and the EEA Agreement in relation to insecticidal seed treatment and vertical links between seed treatment (up-stream) and (treated) seeds (down-stream).

4.4. Digital Agriculture

4.4.1. Overview of the digital agriculture sector

(264) Digital agriculture (or digital farming) refers to the collection of data and information about fields, crop and farms with the aim of providing tailored advice or aggregated data to farmers. Digital agriculture makes use of precision farming[160] technology. In addition, it also takes recourse to intelligent networks and data management tools. Digital agriculture enables the provision of a range of measurement and advisory services, including in relation to weather, yield,

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157 Form CO, chapter 6B.3., paragraph 568 and BASF's response to the Commission's request for information RFI 2, question 2.

158 BASF's response to the Commission's request for information RFI 2, question 2.

159 Parties' response to the M.8084 Commission's request for information RFI 30, [Annex 30.2]. The market share concerns treated seeds, but also all seeds given that basically all OSR seeds are treated with a fungicide.

160 Precision agriculture refers to hardware and equipment (e.g. planters, sensors, robotics) that can execute farming tasks more efficiently and precisely. Precision agriculture hardware devices provide a potential source of data for digital agriculture and potentially enable better implementation of digital agriculture insights; however, precision agriculture is not digital agriculture.

farm management or prescriptions and recommendations of fertility, seeds, and crop protection products, with the aim of increasing farm productivity.

(265) According to the Notifying Party, digital agriculture is currently in its infancy. However, globally countries are adopting digital agriculture at a significant pace. Digital agriculture is of particular importance given that by 2025 the global population is expected to reach 8 billion people (9.6 billion by 2050),[161] and the overall food production will need to significantly increase (by ~70%) in a relatively short period to meet the demand.

(266) The drive to improve agricultural productivity and increase profits is enhancing the adoption of digital agriculture.[162] For instance, digital farm management services are expected to grow worldwide from USD 1.6 billion in 2017 to USD 4.1 billion by 2022; and in Europe, they are expected to reach USD 1.3 billion by 2022.[163]

(267) Digital technologies and analytics are transforming agriculture, making a farm's field operations more insight driven and efficient. Digital agriculture is generally expected to be the main new trend for farming in the coming years and a key source of information and recommendations for farmers. Bayer considers that '*[d]igital farming is about to revolutionise agriculture, not only in Europe, but worldwide*' and that it offers '*the biggest game changing potential*.'[164]

4.4.2. Activities of the Parties in digital agriculture

(268) BASF is active in the provision of digital agriculture services.

(269) The Bayer Divestment Business' digital agriculture activities (the 'Bayer Digital Agriculture Assets') will be transferred to BASF in their entirety. Bayer will receive a non-exclusive licence back to use certain technology needed for Bayer to sell certain of the digital agriculture products outside North America.

4.4.2.1. BASF's activities in digital agriculture

(270) BASF has a limited suite of digital farming application tools including Maglis, which has not yet been fully launched in the EEA, and several small local digital offerings in selected EEA countries.

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161 CEMA's website regarding 'The Global Food Challenge' at: http://www.cema-agri.org/page/global-food-challenge (ID11912).

162 M.8084 Form CO, part 5, Annex 5.1, MarketsandMarkets Report: '*Farm Management Software Market – Global Forecast to 2022*' (2017).

163 M.8084 Form CO, part 5, Annex 5.1, MarketsandMarkets Report: '*Farm Management Software Market – Global Forecast to 2022*' (2017).

164 Press release entitled 'Digital Farming set to revolutionize agriculture', 7 June 2017, available at: http://www.politico.eu/sponsored-content/digital-farming-set-to-revolutionize-agriculture/.

(A) Existing products

(271) BASF currently provides small local digital offerings in selected EEA countries, including in Germany, France, UK, Austria, and Belgium, to support customers in their activities.

(i) Weather tools: a standard online weather forecast programme featuring forecasts at postal code level in Germany, France, UK, Austria, Belgium, among other countries. […]. BASF's main weather tool is BASF Weather.

(ii) Field insight tool, named Observ'Online, an online tool to which BASF's distributors can upload their observations on disease occurrences on the plots of land they visit. This tool is only available in France.

(iii) Farm management tool named BASF Schlagkartei, a tool meant for use by farmers to record their business transactions. It is only available in Germany and is known as.

(iv) Crop protection solution tools: BASF provides a number of localised, non-automated crop protection solutions. In Germany, this consists of an online product catalogue (PIA, regional advice). In the UK (Weed ID App, Cereals Disease ID App, Total Oilseeds App), France (Atlas), and Austria (regional advice), this consists of levelled flowcharts which farmers can follow to come to a diagnosis on what is plaguing a crop.

(272) *Nutrient application tools*: in the UK (The CAT app, OSR GAI app), BASF provides a biomass indicator which helps assess a crop's physiology based off a picture of it.

(273) The above tools have a very limited scope and user group. They are not part of Maglis, and aside from BASF Schlagkartei (see paragraph […][*]), generate no income.

(274) Additionally, one of Maglis tools, the *Maglis Customer Navigator* has been launched as a pilot in the Czech Republic (see Section 4.4.2.1 (B))

(B) Pipeline products

(275) Maglis is a modular system comprised of several BASF's digital application tools. These tools offer a variety of different functionalities, but are independent of each other, must be downloaded separately and do not provide for the systematic exchange of data between them.

(i) Maglis Customer Navigator. This is an application tool that is used by the BASF sales organisation to work with farmers in order to address their needs and growing priorities. Based on information shared with BASF by farmers, the BASF sales organisation uses the Maglis Customer Navigator to recommend the relevant crop protection products that would be suitable for farmers' individual farm and field-specific needs. The level of detail of the recommendation is dependent on the level of information shared by the farmer (e.g. crop type, area

[*] Should read: "271".

planted, farming preference). The product recommendation also contains the label instruction on how to use the product, with an understanding of the farmer's preferences. The Maglis Customer Navigator is not linked to so-called 'big data' and any advice is 'manual' rather than generated by an agronomic engine. Maglis Customer Navigator is currently available in the United States. In the EEA, it has been launched as a pilot product in the Czech Republic.

(ii) Maglis Crop Plan. This tool offers a convenient and efficient way for farmers to monitor and manage field activities in-season. As soon as the planned seeding date has been decided, Maglis Crop Plan oversees and connects information about local weather, soil conditions and weed, disease and pest warnings for farmers' individual plans. With this information at hand, farmers can proactively manage their fields, as well as record and assign tasks to their farm team. The Maglis Crop Plan is mainly based on publicly available data and basic information provided by the farmer (e.g. location and seed type) as opposed to proprietary field trial data etc. Based on the information entered into it, the Maglis Crop Plan generates an alert to a farmer regarding when to use a crop protection product on a field-specific level (no variable-rate capabilities). The product also uses algorithms to make predictions on the likelihood of a negative event (e.g. disease occurrence) based on the information put into the application tool by the farmer. The Maglis Crop Plan has been launched as a pilot in Canada. It has not yet been launched at all in the EEA.

(iii) Maglis Sustainability Assessment. This application is a post-season tool used to evaluate farm efficiency (e.g. fuel and water usage) so as to increase profitability. With the goal of helping farmers becoming more resource efficient, this tool demonstrates the impact of different agricultural practices on main sustainability factors, such as business profitability, soil health, biodiversity, etc. Maglis Sustainability Assessment has been launched as a pilot in Canada. It has not yet been launched at all in the EEA. ·

(iv) Maglis Agronomic Advice. This is an application tool to provide information on the likelihood of a disease occurrence. The tool generates a recommendation based on weather data and geographic location. The current intention is that the tool would be used by the BASF sales organisation, although usage by farmers is also possible. Maglis Agronomic Advice is still in development.

(v) Maglis Leaf Analysis. This is an application to give the farmer feedback on which disease he/she has on his/her field based on a picture the farmer takes of a part of the field and then sends to the app. The tool analyses the photo and, if possible, identifies the disease and recommends a corresponding BASF crop protection product that could be used to treat the disease. This tool is still in development, but was beta-tested in Germany in 2017.

(276) BASF considers Maglis as a tool to interact with its customers/farmers in order to sell BASF crop protection products. Maglis does not host third party tools, nor does BASF charge its customers a fee for use of Maglis apps.

(277) BASF plans to merge Maglis Crop Plan and Maglis Sustainability Assessment into a single tool named Maglis Farm Navigator in the near future. The stand-alone tools of Maglis Crop Plan and Maglis Sustainability will then be discontinued, likely still in 2018. BASF has already done so from 1 January 2018

in Canada. Maglis Farm Navigator will combine the functionalities of Maglis Crop Plan and Maglis Sustainability Assessment, enabling farmers to optimise their farm operations on a continuous basis by way of analyses of field forecasts and practices.

(278) […].[165]

4.4.2.2. The Bayer Digital Agriculture Assets

(279) The Bayer Digital Agriculture Assets includes in particular Bayer's entire digital agriculture business worldwide, including all employees (with the exception of six employees to be retained by Bayer), all tangible and intangible assets, all intellectual property rights, brands, source code, data and algorithms, and supporting materials for the entirety of Bayer Digital Farming's global product portfolio, and all literature, documentation, milestone reports, algorithms, data, architecture and source code pertaining to Bayer's digital agriculture research and development pipeline at all stages of development.[166]

(A) Existing products

(280) The Bayer Digital Agriculture Assets include the following existing products:

(i) *Expert.com* is an analytics tool for the evolvement of certain fungal diseases in agricultural crops. The analytics provide information for a farmer to consider when determining the volume and frequency of fungicide applications and certain insecticide applications. expert.com is able to analyse the infection process of a number of fungal diseases in wheat, barley, rye, triticale, oil seed rape, potatoes and sugar beets. expert.com is also able to analyse the development and migration of certain pests and the duration of effectiveness of insecticides. expert.com produces for the farmer a list of crop protection products (not limited to Bayer products exclusively) which will be effective against the relevant pest or fungal diseases detected. expert.com gives a high level recommendation of base dosage for a predefined restricted set of market products or product combinations.

(ii) *Zoner* is a mapping tool that provides graphic representations of satellite or aerial imagery of fields, enabling the farmer to identify heterogonous zones of field fertility or plant stress. Zoner is designed to assist farmers, agricultural consultants or governments decide how best to optimise management decisions on a localised field or regional scale, but does not provide recommendations like xarvio Field Manager (see below). Zoner is currently being beta tested in Spain (mostly by Bayer internal users, although some external users are beta testing Zoner in Spain).

(iii) *Climate.center* is an online database which stores and manages weather data from different sources in a standardised, user-friendly format. Bayer purchases the weather data from third-party suppliers and resells the data through access to the programme. Bayer purchases weather data from several

165 Form CO, Annex 6C.1.

166 For the full list of the Bayer Digital Agriculture Assets, see paragraph 50 of the Schedule to the Commitments in Case M.8084 – Bayer/Monsanto (2018).

companies including: Deutscher Wetterdienst (DWD) Germany; Meteogroup Germany; Wetter Online Germany; Ubimet Austria; Geosys; and several local organisations with a local weather station network (for example, the Agricultural Chambers in Germany).

(iv) Weedscout is Bayer's smartphone app used for the identification of weeds from smartphone camera images taken by the farmer as he scouts his field. The app analyses the image taken by the farmer to identify the type of weed. Weedscout is still in use, although is being superseded by xarvio Scouting (see recital (vii) below).

(v) Alertas is an analytics tool for the evolvement of certain fungal diseases and pests in agricultural crops on regional basis. It consists of a web interface to provide risk and weather prediction to farmers based on predefined city locations. The tool also offers an application-programming interface ('API') to provide risk and weather prediction to TV screens at sales outlets.

(vi) FTpro is a solution for the management of industry development pilot protocols based on information from external partners including: (i) the capability to collect field level data for the pilots and associate it with protocol job steps; and (ii) the capability to monitor the progress of all protocols down to the individual job step. FTpro is a solution to automate the assembly and gridding of data sets relevant to a field trial into an analyst specified grid shape and dimension. The web application allows to view services, vectors (i.e., polygons and points) and imagery, view maps, turn layers on and off with definition query for dynamic map services or query for feature layers. FTpro allows the user to upload and process vector/raster data.

(vii) xarvio Scouting is a mobile smartphone app for identifying weeds, insects, diseases, nitrogen stress and leaf damage through an image taken by the farmer on a smartphone camera. The image is analysed by the image recognition algorithm in the app to identify the weed, insect, disease, nitrogen level or leaf damage in the crop. xarvio Scouting was launched in November 2017. The recognition algorithm in the app is a self-learning algorithm, that relies on a large database of images in order for the software to accurately identify weeds, insects, diseases, nitrogen stress and leaf damage.

(viii) xarvio Field Manager is a web-based software designed as a hyper-localised field management tool for farmers to gain maximum efficiency out of their use of crop protection products. xarvio Field Manager provides an assessment on the risk of diseases, and advises on: (i) the timing for the application of fungicides (and herbicides currently outside EEA) to a given crop (Spray Timer); and (ii) the localised field-zone where the crop protection product needs to be applied at variable dosage rates. The advice is contained in a prescription (i.e. the file for the implementation of the prescription by the farmer's agronomic equipment) (Zone Spray).

(281) xarvio Field Manager is designed to augment the performance and customer experience of Bayer's portfolio of crop protection products. It will achieve optimum performance with Bayer's own product portfolio as the software can access all internal product information as a data input. However, xarvio Field Manager does not operate exclusively with Bayer's range of crop protection

products. xarvio Field Manager is also able to advise on the most efficient usage of crop protection products from other suppliers.

(282) Xarvio Field Manager has three core functionalities:

– Spray Timer. This function automatically notifies the farmer of the optimal time to spray fungicides on his fields for one out of four applications per growing season. The prescription is generated by an agronomic engine using a disease risk model as a basis, and is provided for a given crop at field level. Spray Timer provides a prescription for spraying of fungicides, while the functionality for herbicides is in early development outside the EEA. Spray Timer does not generate a file for the implementation of the prescription by the farmer's agronomic equipment.

– Zone Spray uses satellite imagery (and additional data sourced either from third parties) to identify variations in biomass across a farmer's field. Based on these differences in biomass measurements, and the input from growth stage models, xarvio Field Manager is able to generate a variable crop protection application map, also referred to as a crop protection application 'prescription'. The map, which can be used directly with the farmer's spraying machinery, illustrates to the farmer the localised areas of the field where s/he needs to apply a greater or smaller amount of a crop protection product, or none at all.

– Autopilot Beta is capable of automatically planning and performing an entire fungicide strategy working with data from Spray Timer and Zone Spray. The Autopilot Beta is currently a pipeline project, it is in the testing stage and is not yet finalised.

(B) Pipeline projects

(283) The Bayer Digital Agriculture Assets include pipeline projects, as specified in Annex RC.2 to the commitments in *Bayer/Monsanto*, that are planned to become new products or enhancements of existing products. As part of the divestment, BASF will acquire all literature, documentation, milestone reports, IP, algorithms, source code and data sets related to those pipeline projects.

4.4.3. Market definition

4.4.3.1. Product market definition

(A) Commission precedents

(284) In *Bayer/Monsanto*,[167] the Commission assessed the digital agriculture sector, in particular, the provision of digitally-enabled agronomic prescriptions, which was considered a differentiated product market that could be further segmented by input product (e.g. fungicides, herbicides, insecticides, fertilizers, seeds, etc.) and by crop groupings (e.g. broad acre crops).

[167] Commission Decision in Case M.8084 – Bayer /Monsanto (2018), recitals 2562 to 2578.

(B) Notifying Party's views

(285) According to the Notifying Party,[168] distinguishing a product/application as a digitally-enabled prescription or a more general digital farming application is not always evident since digital agriculture is still in its infancy. BASF considers a qualitative competitive assessment of digital agriculture products a more adequate approach.

(C) Commission assessment

(286) Digital agriculture services are highly differentiated and still evolving. As mentioned in Section 4.4.2, the Parties are offering or developing a diverse range of digital agriculture services.

(287) In particular, digital agriculture includes, among others, the provision of digitally-enabled agronomic prescriptions ('digitally-enabled prescriptions'). These are recommendations or advice provided to growers on the selection and application (e.g. dosage, timing, etc.) of agronomic inputs (e.g. seeds, crop protection products such as herbicides, insecticides and fungicides, fertilisers, etc.) provided at a geographically increasingly granular level (e.g. field, field-zone, eventually by square meter) for a grower to implement. These recommendations are generated by an analytics agronomic engine based on large sets of public and proprietary data.

(288) For the purposes of this decision, the Commission focusses on the provision of digitally-enabled prescriptions within the broad sector of digital agriculture. This is because, in other area, based on the available evidence, the results of the investigation and taking into account the stage of the development and current features of digital agriculture as a whole, the Parties' activities do not seem to overlap and/or sufficient competition would likely remain post-Transaction.

4.4.3.2. Geographic market definition

(A) Commission precedents

(289) In *Bayer/Monsanto*,[169] the Commission assessed the digital agriculture sector, in particular, the provision of digitally-enabled prescriptions, which was considered to be a national market. However, the Commission also took into account the broader regional geographic context where relevant.

(B) Notifying Party's views

(290) The Notifying Party has not contested the definition of the geographic market applied by the Commission for the purposes of competitive assessment in *Bayer/Monsanto*.[170]

168 Form CO, chapter 6C, paragraph 610.
169 Commission Decision in Case M.8084 – Bayer/Monsanto (2018), recitals 2583 to 2593.
170 Form CO, chapter 6.C, paragraph 610.

(C) Commission assessment

(291) There are strong indications that the markets for the provision of digitally-enabled prescriptions are national in scope.

(292) The market investigation conducted in the recent *Bayer/Monsanto* decision indicated that the majority of competitors and customers understand that digital agriculture services are developed centrally but they are tweaked and adapted for deployment in individual countries even if their core characteristics and functionalities do not change.[171]

(293) Additionally, factors such as farming practices, language, government regulations and specific local laws would need to be taken into account to be able to provide digital agriculture services.

(294) The Commission considers the relevant geographic market for the provision of digitally-enabled prescriptions can be left open. However, in its assessment, the Commission will take into account the national market as well as the broader regional geographic context where relevant.

4.4.4. Competitive assessment: Digital agriculture

4.4.4.1. Notifying Party's views[172]

(295) First, the Notifying Party argues that the Transaction does not give rise to any concerns in a market for digitally-enabled prescriptions, or in digital agriculture in general.

(296) BASF claims that: (i) the Bayer Digital Agriculture Assets will allow BASF to become an effective competitor to Bayer/Monsanto and other players; (ii) BASF's current geographic footprint is different from Bayer's; (iii) the acquisition of the Bayer Digital Agriculture Assets will not incentivise BASF to limit or discontinue investment in its current portfolio; and importantly (iv) the Parties' digital farming portfolios are to a large extent not comparable from a user perspective.

(297) Additionally, BASF indicates that there is currently a vast range of players active in digital farming. Every company in the digital farming space is developing one or more products which differ in various ways in terms of data input, technology, functionality or focus.[173]

4.4.4.2. Commission assessment

(298) For the reasons set out below, the Commission considers that the Transaction would not give rise to serious doubts in relation to digitally-enabled prescriptions.

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171 Commission Decision in Case M.8084 – Bayer/Monsanto (2018), recitals 2584 to 2590.
172 Form CO, chapter 6C, paragraphs 636-637.
173 Form CO, chapter 6C, paragraph 612.

(299) First, the Parties do not overlap in digitally-enabled prescriptions functionalities. As described above, BASF's Maglis suite of products is being developed mainly as a marketing tool enabling BASF to better interact with distributors and farmers. In the future, Maglis will provide general recommendations to farmers to help them use information collected from various sources to facilitate the taking of crop management decisions. The Commission considers that Maglis is not currently and appears unlikely to be in the foreseeable future a tool providing digitally-enabled prescriptions of a type enabled by the Bayer Digital Agriculture Assets. In contrast to BASF's Maglis general recommendations and as detailed in the *Bayer/Monsanto* decision[174], Bayer's digital agriculture efforts include the development and the offering of digitally-enabled prescriptions based on algorithms and data at a granular level and oriented towards achieving specific results. Bayer is about to start commercialising its digitally-enabled prescriptions of fungicides for broad acre crops in the EEA and is likely to further expand its offering in terms of crop protection products and crops covered.

(300) Second, the divestment of the Bayer Digital Agriculture Assets will be accompanied by a worldwide (excluding North America) licence back to Bayer that will allow Bayer to continue developing and offering digital agriculture products based on the technologies it is divesting to BASF. Therefore, the Transaction will not only preserve the existing number of competitors offering digitally enabled prescriptions present in the EEA but will actually increase the number of active players. Indeed, the Transaction will transfer to BASF Bayer's current and pipeline digitally-enabled prescription assets and products in the EEA, creating a new competitor in this market without removing Bayer's ability to offer such prescriptions on the basis of the transferred technologies.

4.4.5. Conclusion on digital agriculture

(301) On the basis of the available evidence and the results of the investigation, the Commission considers that the Transaction does not give rise to serious doubts as to its compatibility with the internal market in relation digitally enabled prescriptions.

5. PROPOSED REMEDIES

5.1. Framework of the assessment of the commitments

(302) Where, as in this case, a notified concentration raises serious doubts as to its compatibility with the internal market, the Parties may modify the notified concentration so as to remove the grounds for the serious doubts identified by the Commission with a view to having it declared compatible with the internal market pursuant to Article 6(1)(b) in conjunction with Article 6(2) of the Merger Regulation.

(303) As set out in the Commission Notice on Remedies, commitments have to eliminate the Commission's serious doubts entirely and they have to be comprehensive and effective from all points of view.

[174] Commission Decision in Case M.8084 – Bayer/Monsanto (2018), recitals 2614 to 2629.

(304) In assessing whether or not commitments will restore effective competition, the Commission considers all relevant factors, including the type, scale and scope of the proposed commitments, with reference to the structure and particular characteristics of the market in which the Commission has identified serious doubts, including the position of the Parties and other participants on the market.

5.2. Commitments submitted by the Notifying Party

(305) In order to address the serious doubts raised by the Transaction with a view to rendering the concentration compatible with the internal market, the Notifying Party has modified the notified concentration by submitting to the Commission proposed commitments.

(306) The Notifying Party submitted two sets of commitments. Notably, the Notifying Party formally submitted a remedy proposal on 9 April 2018 and a revised remedy proposal on 10 April 2018 (the 'Initial Commitments'). After the Commission gathered the views of market participants on the Initial Commitments (the 'market test'), and informed the Notifying Party of the remaining serious doubts raised by the Transaction, the Notifying Party submitted a revised remedy proposal on 20 April 2018 (the 'Final Commitments').

(307) The Commission considers that the Final Commitments are sufficient to ensure that, if implemented, the Transaction no longer raises serious doubts as to its compatibility with the internal market. The Final Commitments are annexed to this Decision and form an integral part of the Decision.

5.3. Initial Commitments

(308) Initially, the Notifying Party proposed the divestment of two separate divestment packages, to be purchased by either separate purchasers or by one single purchaser (the 'Purchaser' or 'Purchasers'): BASF's Trunemco assets (the 'Nematicidal Seed Treatment Assets') and a licence to Bayer's [NSH line of research 1] for NSH (the '[NSH line of research 1] Data Transfer and Licence' and, together with the Nematicidal Seed Treatment Assets, the 'Divestment Businesses').

(309) The Nematicidal Seed Treatment Assets consist of the assets comprising BASF's global nematode control seed treatment pipeline project, known as 'Trunemco' and which consists of a combination of a biological (a type of bacillus (bacteria) that colonises plant roots and excludes pathogens) and a semio-chemical. As described in the Initial Commitments, the Nematicidal Seed Treatment Assets consisted of:

(a) all intellectual property related to Trunemco, including but not limited to worldwide patents, trademarks, and copyrights;

(b) all product registrations and pending regulatory submissions related to Trunemco;

(c) all current formulations and those in development, as well as inter alia all developed processes, procedures, recipes, manuals, and quality control

measures for the manufacture and formulation of Trunemco, including but not limited to protectable trade secrets;

(d) all data and analyses from Trunemco field trials, including ongoing trials, protocols, and studies and summaries of such studies;

(e) all sales and marketing assets, including BASF's marketing and distribution plans, all market research conducted to date on Trunemco, the Trunemco website and domains, and Trunemco social media sites (to the extent that such websites, domains or social media sites are in existence);

(f) a transitional supply agreement for the biological (bacillus) component of Trunemco, at variable cost for an initial period of one year, which can be extended at the option of the purchaser for up to two further periods (up to a total of three years); and

(g) a number of transitional services including: sales and marketing training; assistance regarding regulatory approvals; support regarding the completion of ongoing regulatory studies; consulting support regarding supply chain processes.

(310) The [NSH line of research 1] Data Transfer and Licence consisted of the transfer of data and know-how from field trials and an exclusive licence to the IP rights and know-how relating to such line of research for all non-commercial and commercial applications in the field of non-selective uses. The [NSH line of research 1] Data Transfer and Licence also included the transfer of two key personnel. Moreover, as described in the Initial Commitments, the [NSH line of research 1] Data Transfer and Licence included a material testing agreement for BASF's [NSH line of research 1]-tolerance genes and an option for the Purchaser to use these genes in developing [NSH line of research 1]-tolerant […] through a development and commercial licence (with a cross-licence giving BASF's [NSH line of research 1] chemistry access to the Purchaser's traited acres).

(311) In addition, the Notifying Party proposed to enter into related commitments, including the separation of the divested businesses from their retained businesses, the preservation of the viability, marketability and competitiveness of the divested businesses, including the appointment of a monitoring trustee and, if necessary, a divestiture trustee.

(312) The Commission assessed the appropriateness of the Initial Commitments and carried out a market test.

5.4. The Commission's market test

(313) The Commission launched a market test of the Initial Commitments on 11 April 2018.

(314) In general, the view of the market test respondents was that the Initial Commitments could remedy the serious doubts identified by the Commission, subject to the modification of a number of specific elements of the Initial Commitments.

(315) In particular, a majority of respondents indicated that it was important for the Purchaser of the Nematicidal Seed Treatment Assets to obtain personnel in order to ensure the viability and competitiveness of the Nematicidal Seed Treatment Assets. A majority of respondents also indicated that the transitional supply arrangements (at variable cost) for the biological (bacillus) component of Trunemco should be of a longer duration than foreseen in the Initial Commitments.[175]

(316) A number of respondents also indicated that the IP licence provisions were too restrictive. In the Initial Comments, the Purchaser was granted a licence of IP based on the original two-component formulation of Trunemco only. These respondents indicated that the Purchaser should be free to create additional mixtures using the two components of Trunemco, for example by adding an additional active ingredient.[176] A number of respondents further identified that due to BASF retaining certain IP rights regarding the mixture components, it was not excluded that BASF could re-enter the nematicidal seed treatment market with a product consisting of the same or similar components of Trunemco.[177]

(317) Regarding the [NSH line of research 1] Data Transfer and Licence, half of the respondents expressing a view explained that the ancillary cross-licensing obligation would have an adverse effect on the Purchaser's incentives to fully develop the [NSH line of research 1] line of research globally, as well as more generally on the viability and competitiveness of the [NSH line of research 1] Data Transfer and Licence.[178] This obligation would require the Purchaser and BASF to enter into an additional cross-licensing agreement giving BASF access to the Purchaser's [NSH line of research 1] traited acres, if the Purchaser made use of the option to a non-exclusive development and commercial licence to BASF's [NSH line of research 1] tolerance genes. Such option would enable the Purchaser to develop [NSH line of research 1]-tolerance traits based on these BASF genes to be used with the products developed through the [NSH line of research 1] line of research.

(318) In all other respects, respondents generally considered that the Divested Businesses include all necessary assets and would be able to compete effectively with the merged entity.[179]

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175 See responses to the Questionnaire on Commitments offered by BASF and to the Questionnaire on Commitments offered by BASF

176 See responses to the Questionnaire on Commitments offered by BASF and to the Questionnaire on Commitments offered by BASF

177 See responses to the Questionnaire on Commitments offered by BASF and to the Questionnaire on Commitments offered by BASF

178 See responses to the Questionnaire on Commitments offered by BASF and to the Questionnaire on Commitments offered by BASF.

179 See responses to the Questionnaire on Commitments offered by BASF and to the Questionnaire on Commitments offered by BASF.

5.5. Final Commitments submitted by the Notifying Party

5.5.1. Description of the Final Commitments

(319) As explained above, the Notifying Party submitted the Final Commitments on 20 April 2018. The full text of the Final Commitments is attached as the Annex to this Decision.

(320) The Final Commitments have been modified vis-à-vis the Initial Commitments as described in Section 5.3 as follows:

(a) at the option of the Purchaser, up to […] employees […] are included in the Nematicidal Seed Treatment Assets to ensure their viability and competitiveness;

(b) transitional supply of the biological (bacillus) component of Trunemco at variable cost was modified from a total maximum period of […] years to an initial period of […] years, extendable up to a total of […] years;

(c) BASF commits not to assert its rights under any patents to restrict the use of the Nematicidal Seed Treatment Assets in mixtures with any other active ingredients;

(d) BASF shall not develop or commercialise a nematicidal seed treatment based on the two Trunemco components, for a period of […] years following the sale of the Nematicidal Seed Treatment Assets (or the lifetime of the patent rights, whichever is longer); and

(e) […].

(321) The Final Commitments also clarify some language to ensure that all necessary rights and assets transfer to the Purchasers.

5.5.2. Assessment of the Final Commitments

(322) The Commission considers that the Final Commitments set aside the serious doubts raised by the Transaction entirely because they remove the entire overlap between the Parties in nematicidal seed treatment in the EEA and NSH innovation in which serious doubts were raised. The Commission also finds that the modifications contained in the Final Commitments and described at Section 5.5.1 above address the outstanding issues, as identified in the course of the market investigation, related to the viability and competitiveness of the Divestment Businesses.

5.5.3. Conclusion on the Final Commitments

(323) For the reasons outlined above, the Commission considers that the commitments entered into by the undertakings concerned are sufficient and appropriate to eliminate the serious doubts as to the compatibility of the Transaction with the internal market with respect to (i) the sale of nematicidal seed treatment in the EEA and (ii) NSH innovation.

(324) Under the first sentence of the second subparagraph of Article 6(2) of the Merger Regulation, the Commission may attach to its decision conditions and

obligations intended to ensure that the undertakings concerned comply with the commitments they have entered into vis-à-vis the Commission with a view to rendering the concentration compatible with the internal market.

(325) The fulfilment of the measures that gives rise to the structural change of the market is a condition, whereas the implementing steps that are necessary to achieve this result are generally obligations on the Parties. Where a condition is not fulfilled, the Commission's decision declaring the concentration compatible with the internal market and the EEA Agreement is no longer applicable. Where the undertakings concerned commit a breach of an obligation, the Commission may revoke the clearance decision in accordance with Article 6(3) of the Merger Regulation. The undertakings concerned may also be subject to fines and periodic penalty payments under Articles 14(2) and 15(1) of the Merger Regulation.

(326) In accordance with the basic distinction between conditions and obligations, the commitments in Sections B and C as well as the Schedule of the Final Commitments set out in the Annex constitute conditions attached to this decision, as only through full compliance therewith can the structural changes in the relevant markets be achieved. The other commitments set out in the Annex constitute obligations, as they concern the implementing steps that are necessary to achieve the modifications sought in a manner compatible with the internal market.

(327) The full text of the Final Commitments is attached to this Decision as the Annex and forms an integral part thereof.

6. CONCLUSION

(328) For the above reasons, the Commission has decided not to oppose the proposed concentration notified on 7 March 2018, as modified by the commitments presented on 20 April 2018, and to declare it compatible with the internal market and with the functioning of the EEA Agreement, subject to full compliance with the conditions in Sections B and C as well as the Schedule of the commitments annexed to the present decision and with the obligations contained in the other sections of the said commitments. This decision is adopted in application of Article 6(1)(b) in conjunction with Article 6(2) of the Merger Regulation and Article 57 of the EEA Agreement.

For the Commission

(Signed)
Phil HOGAN
Member of the Commission

Annex

20 April 2018

Case M.8851 – BASF / BAYER DIVESTMENT BUSINESS

COMMITMENTS TO THE EUROPEAN COMMISSION

Pursuant to Article 6(2) of Council Regulation (EC) No 139/2004 (the ***Merger Regulation***), BASF SE (***BASF***) hereby enter into the following Commitments (the ***Commitments***) vis-à-vis the European Commission (the ***Commission***) with a view to rendering its proposed acquisition of the Bayer Divestment Business (the ***Concentration***) compatible with the internal market and the functioning of the EEA Agreement.

This text shall be interpreted in light of the Commission's decision pursuant to Article 6(1)(b) of the Merger Regulation to declare the Concentration compatible with the internal market and the functioning of the EEA Agreement (the ***Decision***), in the general framework of European Union law, in particular in light of the Merger Regulation, and by reference to the Commission Notice on remedies acceptable under Council Regulation (EC) No 139/2004 and under Commission Regulation (EC) No 802/2004 (the ***Remedies Notice***).

Section A. Definitions

1. For the purpose of the Commitments, the following terms shall have the following meaning:

   Affiliated Undertakings: undertakings controlled by the Parties and/or by the ultimate parents of the Parties, whereby the notion of control shall be interpreted pursuant to Article 3 of the Merger Regulation and in light of the Commission Consolidated Jurisdictional Notice under Council Regulation (EC) No 139/2004 on the control of concentrations between undertakings (the ***Consolidated Jurisdictional Notice***).

   Assets: the assets that contribute to the current operation or are necessary to ensure the viability and competitiveness of the Divestment Businesses as indicated in Section B and Section C and described more in detail in the Schedule.

   BASF: BASF SE, a stock corporation incorporated under the laws of the Federal Republic of Germany, with its registered office at G-FLL/S-D100, Ludwigshafen am Rhein, 67056, and registered with the local court (*Amtsgericht*) Ludwigshafen am Rhein under Handelsregister (commercial register) number HRB 6000.

   Bayer: Bayer Aktiengesellschaft, a stock corporation incorporated under the laws of the Federal Republic of Germany, with its registered office at Kaiser-Wilhelm-Allee 1, 51373

Leverkusen, Germany, and registered with the local court (*Amtsgericht*) Cologne under Handelsregister number 48248.

Bayer Divestment Business: the businesses to be acquired by BASF from Bayer pursuant to the commitments given by Bayer to the European Commission in case M.8084 – *Bayer/Monsanto*.

Confidential Information: any business secrets, know-how, commercial information, or any other information of a proprietary nature that is not in the public domain.

Conflict of Interest: any conflict of interest that impairs the Trustee's objectivity and independence in discharging its duties under the Commitments.

Divestment Businesses: the Trunemco Assets and the [NSH line of research 1] Data Transfer and Licence.

Divestiture Trustee: one or more natural or legal person(s) who is/are approved by the Commission and appointed by BASF and who has/have received from BASF the exclusive Trustee Mandate to sell the Divestment Businesses to one or more Purchasers at no minimum price.

Effective Date: the date of adoption of the Decision.

Hold Separate Managers: the persons appointed by BASF for the Divestment Businesses to manage the day-to-day businesses under the supervision of the Monitoring Trustee.

Key Personnel: all personnel necessary to maintain the viability and competitiveness of the Divestment Businesses, as listed in the Schedule, including the Hold Separate Managers (as applicable).

Monitoring Trustee: one or more natural or legal person(s) who is/are approved by the Commission and appointed by BASF, and who has/have the duty to monitor BASF's compliance with the conditions and obligations attached to the Decision.

Monsanto: Monsanto Company, a corporation incorporated under the laws of the State of Delaware, United States of America, with its registered office at 800 North Lindbergh Boulevard, St Louis, Missouri, 63167, United States of America, and registered with the Secretary of State of the State of Delaware under File Number 3174788.

Parties: BASF and Bayer.

Purchaser: the entity or entities approved by the Commission as acquirer or acquirers of the Divestment Businesses in accordance with the criteria set out in Section E.

Purchaser Criteria: the criteria laid down in paragraph 18 and paragraph 19 of these Commitments that Purchasers of the Divestment Businesses must fulfil in order to be approved by the Commission.

Schedule(s): the schedule(s) to these Commitments describing more in detail the Divestment Businesses.

[NSH line of research 1] Data Transfer and Licence: the package of intellectual property rights relating to [NSH line of research 1h] class herbicide chemistry type [mode of action for NSH line of research 1] inhibitor described in part II of the Schedule to which BASF commits to give the Purchaser exclusive rights for non-selective uses. This in addition includes: (i) a material transfer agreement on terms substantially similar to those granted by BASF to […] (as per the […], attached as Annex I), which includes a research license for the Purchaser […]; and (ii) an option to a non-exclusive development and commercial license, on commercially reasonable terms, to […] that will be exercisable if the Purchaser develops a registrable [NSH line of research 1] class herbicide chemistry type [mode of action for NSH line of research 1] inhibitor as defined in the [NSH line of research 1] Data Transfer and License. The non-exclusive development and commercial license would permit the Purchaser to develop a [mode of action for NSH line of research 1] HT trait in […].

[NSH line of research 1] Data Transfer and Licence Closing: the transfer to the Purchaser of the [NSH line of research 1] Data Transfer and Licence.

[NSH line of research 1] Data Transfer and Licence Closing Period: the period of […] from the approval of the Purchaser and the terms of sale by the Commission.

[NSH line of research 1] Data Transfer and Licence First Divestiture Period: the period of […] from the date of the closing of the *Bayer / Monsanto* transaction.

[NSH line of research 1] Data Transfer and Licence Samples: samples of up to 100 milligrams of chemical structures where such samples are still available to BASF and have not degraded in storage. BASF will not re-synthesise samples of chemical structures if it no longer has sufficient volumes, or quality, of the relevant samples.

Trunemco Assets: the assets comprising BASF's global nematode control seed treatment pipeline project, known as 'Trunemco', described in part I of the Schedule, and defined by the nematode repellent combination of MBI 600 and cis-Jasmone.

Trunemco Assets Closing: the transfer to the Purchaser of the Trunemco Assets.

Trunemco Assets Closing Period: the period of […] months from the approval of the Purchaser and the terms of sale by the Commission.

Trunemco Assets First Divestiture Period: the period of […] months from the date of the closing of the *Bayer / Monsanto* transaction.

Trunemco Patent Rights: the patents cited in paragraph 3(a)(i)-(iii) of part I of the Schedule.

Trustee(s): the Monitoring Trustee and/or the Divestiture Trustee as the case may be.

Trustee Divestiture Period: the period of […] months from the end of the Trunemco Assets First Divestiture Period and/or [NSH line of research 1] Data Transfer and Licence First Divestiture Period (as applicable).

Section B. The commitment to divest the Trunemco Assets

Commitment to divest

2. In order to maintain effective competition, BASF commits to divest, or procure the divestiture of, the Trunemco Assets by the end of the Trustee Divestiture Period as a going concern to a Purchaser and on terms of sale approved by the Commission in accordance with the procedure described in paragraph 18 of these Commitments. To carry out the divestiture, BASF commits to find a Purchaser and to enter into a final binding sale and purchase agreement for the sale of the Trunemco Assets within the Trunemco Assets First Divestiture Period. If BASF has not entered into such an agreement at the end of the Trunemco Assets First Divestiture Period, BASF shall grant the Divestiture Trustee an exclusive mandate to sell the Trunemco Assets in accordance with the procedure described in paragraph 32 in the Trustee Divestiture Period.

3. BASF shall be deemed to have complied with this commitment if:

   (a) by the end of the Trustee Divestiture Period, BASF or the Divestiture Trustee has entered into a final binding sale and purchase agreement for the Trunemco Assets and the Commission approves the proposed Purchaser and the terms of sale as being consistent with the Commitments in accordance with the procedure described in paragraph 18; and

   (b) the Trunemco Assets Closing takes place within the Trunemco Assets Closing Period.

4. In order to maintain the structural effect of the Commitments, BASF shall, for a period of 10 years after the Trunemco Assets Closing or the lifetime of the Trunemco Patent Rights (whichever is longer), not acquire, whether directly or indirectly, the possibility of exercising influence (as defined in paragraph 43 of the Remedies Notice, footnote 3) over the whole or part of the Trunemco Assets, or develop and/or commercialise any seed treatment with nematicidal action that uses the nematode repellent combination of MBI 600 and cis-Jasmone in any form (including in a mixture of Trunemco with other components), unless, following the submission of a reasoned request from BASF showing good cause and accompanied by a report from the Monitoring Trustee (as provided in paragraph 46 of these Commitments), the Commission finds that the structure of the market has changed to such an extent that the absence of influence over the Trunemco Assets is no longer necessary to render the proposed concentration compatible with the internal market.

Structure and definition of the Divestment Business

5. The Trunemco Assets consists of the assets comprising BASF's global nematode control seed treatment pipeline project, known as 'Trunemco', described in part I of the Schedule, and defined by the nematode repellent combination of MBI 600 and cis-Jasmone.

Section C. The commitment to divest the [NSH line of research 1] Data **Transfer and Licence**

Commitment to divest

6. In order to maintain effective competition, BASF commits to divest, or procure the divestiture of, the [NSH line of research 1] Data Transfer and Licence by the end of the Trustee Divestiture Period as a going concern to a Purchaser and on terms of sale approved by the Commission in accordance with the procedure described in paragraph 19 of these Commitments. To carry out the divestiture, BASF commits to find a Purchaser and to enter into a final binding sale and purchase agreement for the sale of the [NSH line of research 1] Data Transfer and Licence within the [NSH line of research 1] Data Transfer and Licence First Divestiture Period. If BASF has not entered into such an agreement at the end of the [NSH line of research 1] Data Transfer and Licence First Divestiture Period, BASF shall grant the Divestiture Trustee an exclusive mandate to sell the [NSH line of research 1] Data Transfer and Licence in accordance with the procedure described in paragraph 32 in the Trustee Divestiture Period.

7. BASF shall be deemed to have complied with this commitment if:

   (a) by the end of the Trustee Divestiture Period, BASF or the Divestiture Trustee has entered into a final binding sale and purchase agreement for the [NSH line of research 1] Data Transfer and Licence and the Commission approves the proposed Purchaser and the terms of sale as being consistent with the Commitments in accordance with the procedure described in paragraph 19; and

   (b) the [NSH line of research 1] Data Transfer and Licence Closing takes place within the [NSH line of research 1] Data Transfer and Licence Closing Period.

8. In order to maintain the structural effect of the Commitments, BASF shall, for a period of […] after the [NSH line of research 1] Data Transfer and Licence Closing, not acquire, whether directly or indirectly, the possibility of exercising influence (as defined in paragraph 43 of the Remedies Notice, footnote 3) over the whole or part of the [NSH line of research 1] Data Transfer and Licence, unless, following the submission of a reasoned request from BASF showing good cause and accompanied by a report from the Monitoring Trustee (as provided in paragraph 46 of these Commitments), the Commission finds that the structure of the market has changed to such an extent that the absence of influence over the [NSH line of research 1] Data Transfer and Licence is no longer necessary to render the proposed concentration compatible with the internal market.

Structure and definition of the Divestment Business

9. The [NSH line of research 1] Data Transfer and Licence comprises the package of intellectual property rights relating to [NSH line of research 1] class herbicide chemistry type [mode of action for NSH line of research 1] inhibitor described in part II of the Schedule to which BASF commits to give the Purchaser exclusive rights for non-selective uses.

Section D. Related commitments

Preservation of viability, marketability and competitiveness

10. From the Effective Date until the Trunemco Assets Closing and [NSH line of research 1] Data Transfer and Licence Closing (as applicable), BASF shall preserve or procure the preservation of the economic viability, marketability and competitiveness of the Divestment Businesses, in accordance with good business practice, and shall minimise as far as possible any risk of loss of competitive potential of the Divestment Businesses. In particular BASF undertakes:

    (a) not to carry out any action that might have a significant adverse impact on the value, management or competitiveness of the Divestment Businesses or that might alter the nature and scope of activity, or the industrial or commercial strategy or the investment policy of the Divestment Businesses;

    (b) to make available, or procure to make available, sufficient resources for the development of the Divestment Businesses, on the basis and continuation of the existing business plans;

    (c) to take all reasonable steps, or procure that all reasonable steps are being taken, including appropriate incentive schemes (based on industry practice), to encourage all Key Personnel to remain with the Divestment Businesses. Where, nevertheless, individual members of the Key Personnel exceptionally leave the Divestment Businesses, BASF, with the assistance of Bayer, shall provide a reasoned proposal to replace the person or persons concerned to the Commission and the Monitoring Trustee. BASF must be able to demonstrate to the Commission that the replacement is well suited to carry out the functions exercised by those individual members of the Key Personnel. The replacement shall take place under the supervision of the Monitoring Trustee, who shall report to the Commission.

Hold-separate obligations

11. BASF commits, from the Effective Date until the Trunemco Assets Closing and the [NSH line of research 1] Data Transfer and Licence Closing (as applicable), to keep, or procure the keeping of, the Divestment Businesses separate from the businesses it is retaining and to ensure that unless explicitly permitted under these Commitments: (i) management and staff of the businesses retained by BASF have no involvement in the Divestment Businesses; and (ii) the Key Personnel have no involvement in any business retained by

BASF and do not report to any individual outside the Divestment Businesses. For the avoidance of doubt, BASF also commits to […].

12. Until the Trunemco Asset Closing and [NSH line of research 1] Data Transfer and Licence Closing (as applicable), BASF shall assist the Monitoring Trustee in ensuring that the Divestment Businesses are managed as distinct and saleable entities separate from the businesses which BASF is retaining. Immediately after the adoption of the Decision, BASF shall appoint a Hold Separate Manager for each of the Trunemco Assets and [NSH line of research 1] Data Transfer and Licence respectively. […]. The Hold Separate Managers shall manage the Divestment Businesses independently and in the best interest of the businesses with a view to ensuring their continued economic viability, marketability and competitiveness and their independence from the businesses retained by BASF. The Hold Separate Managers shall closely cooperate with and report to the Monitoring Trustee and, if applicable, the Divestiture Trustee. Any replacement of either or both Hold Separate Managers shall be subject to the procedure laid down in paragraph 10(c) of these Commitments. The Commission may, after having heard BASF, require BASF to replace either or both Hold Separate Managers.

Ring-fencing

13. BASF shall implement, or procure to implement, all necessary measures to ensure that it does not, after the Effective Date, obtain any Confidential Information relating to the Divestment Businesses and that any such Confidential Information obtained by BASF before the Effective Date will be eliminated and not be used by BASF. In particular, the [NSH line of research 1] Data Transfer and Licence shall not be incorporated into any central information technology network held by BASF. BASF shall implement appropriate ring-fencing measures in respect of the way in which information related to the Trunemco Assets is stored on its central information technology network until such time as the participation of the Trunemco Assets in the central information technology network can be severed. BASF may obtain or keep information relating to the Divestment Businesses which is reasonably necessary for the divestiture of the Divestment Businesses or the disclosure of which to BASF is required by law. […].

Non-solicitation clause

14. BASF undertakes, subject to customary limitations, not to solicit, and to procure that Affiliated Undertakings do not solicit, the Key Personnel transferred with the Divestment Businesses for a period of […] after the [NSH line of research 1] Data Transfer and Licence Closing.

Due diligence

15. In order to enable potential purchasers to carry out a reasonable due diligence of the Divestment Businesses, BASF shall, subject to customary confidentiality assurances and dependent on the stage of the divestiture process:

    (a) provide, or procure to provide, to potential purchasers sufficient information as regards the Divestment Businesses;

    (b) provide, or procure to provide, to potential purchasers sufficient information relating to the Key Personnel and allow them reasonable access to the Key Personnel.

Reporting

16. BASF shall submit written reports in English on potential purchasers of the Divestment Businesses and developments in the negotiations with such potential purchasers to the Commission and the Monitoring Trustee no later than 10 days after the end of every month following the Effective Date (or otherwise at the Commission's request). BASF shall submit a list of all potential purchasers having expressed interest in acquiring the Divestment Businesses to the Commission at each and every stage of the divestiture process, as well as a copy of all the offers made by potential purchasers within five days of their receipt.

17. BASF shall inform the Commission and the Monitoring Trustee on the preparation of the data room documentation and the due diligence procedure and shall submit a copy of any information memorandum to the Commission and the Monitoring Trustee before sending the memorandum out to potential purchasers.

Section E. The Purchaser

18. In order to be approved by the Commission as the Purchaser of the Trunemco Assets, the Purchaser must fulfil the following criteria:

    (a) The Purchaser shall be independent of and unconnected to each of BASF and Bayer and their respective Affiliated Undertakings (this being assessed having regard to the situation following the divestiture);

    (b) The Purchaser shall have the financial resources, proven expertise and incentive to maintain and develop the Trunemco Assets as a viable and active competitive force in competition with BASF and other competitors;

    (c) The acquisition of the Trunemco Assets by the Purchaser must neither be likely to create, in light of the information available to the Commission, *prima facie* competition concerns nor give rise to a risk that the implementation of the Commitments will be delayed. In particular, the Purchaser must reasonably be expected to obtain all necessary

approvals from the relevant regulatory authorities for the acquisition of Trunemco Assets; and

(d) The Purchaser shall have relevant industry experience.

19. In order to be approved by the Commission as the Purchaser of the [NSH line of research 1] Data Transfer and Licence, the Purchaser - who can be (but does not need to be) the same Purchaser as the Purchaser of the Trunemco Assets - must fulfil the following criteria:

(a) The Purchaser shall be independent of and unconnected to each of BASF and Bayer and their respective Affiliated Undertakings (this being assessed having regard to the situation following the divestiture);

(b) The Purchaser shall have the financial resources, proven expertise and incentive to maintain and develop the [NSH line of research 1] Data Transfer and Licence as a viable and active competitive force in competition with BASF and other competitors. […]; and

(c) The acquisition of the [NSH line of research 1] Data Transfer and Licence by the Purchaser must neither be likely to create, in light of the information available to the Commission, *prima facie* competition concerns nor give rise to a risk that the implementation of the Commitments will be delayed. In particular, the Purchaser must reasonably be expected to obtain all necessary approvals from the relevant regulatory authorities for the acquisition of the [NSH line of research 1] Data Transfer and Licence.

20. The final binding sale and purchase agreements (as well as ancillary agreements) relating to the divestment of the Divestment Businesses shall be conditional on the Commission's approval. When BASF has reached agreement with each Purchaser, it shall submit a fully documented and reasoned proposal, including a copy of the final agreement, within one week to the Commission and the Monitoring Trustee. BASF must be able to demonstrate to the Commission that each Purchaser fulfils the Purchaser Criteria and that the Divestment Businesses are being sold in a manner consistent with the Commission's Decision and the Commitments. For the approval, the Commission shall verify that each Purchaser fulfils the Purchaser Criteria and that Divestment Businesses are being sold in a manner consistent with the Commitments including their objective to bring about a lasting structural change in the market. The Commission may approve the sale of the Divestment Businesses without one or more Assets or parts of the personnel, or by substituting one or more Assets or parts of the personnel with one or more different assets or different personnel, if this does not affect the viability and competitiveness of the Divestment Businesses after the sale, taking account of the proposed Purchaser.

Section F. Trustee

I. Appointment procedure

21. BASF shall appoint a Monitoring Trustee to carry out the functions specified in these Commitments for a Monitoring Trustee. BASF commits not to close the Concentration before the appointment of a Monitoring Trustee.

22. If BASF has not entered into binding sale and purchase agreement (or agreements) regarding the Divestment Businesses one month before the end of the Trunemco Assets First Divestiture Period and/or [NSH line of research 1] Data Transfer and Licence First Divestiture Period (as applicable) or if the Commission has rejected a purchaser proposed by BASF at that time or thereafter, BASF shall appoint a Divestiture Trustee for the part of the Divestment Businesses (i.e. the Trunemco Assets and/or the [NSH line of research 1] Data Transfer and Licence as applicable) for which either BASF has not entered into a binding sale and purchase agreement, or the Commission has rejected a purchaser. The appointment of the Divestiture Trustee shall take effect upon the commencement of the Trustee Divestiture Period.

23. The Trustee shall:

(i) at the time of appointment, be independent of BASF and its Affiliated Undertakings;

(ii) possess the necessary qualifications to carry out its mandate, for example have sufficient relevant experience as an investment banker or consultant or auditor; and

(iii) neither have nor become exposed to a Conflict of Interest.

24. The Trustee shall be remunerated by BASF in a way that does not impede the independent and effective fulfilment of its mandate. In particular, where the remuneration package of a Divestiture Trustee includes a success premium linked to the final sale value of the Divestment Business, such success premium may only be earned if the divestiture takes place within the Trustee Divestiture Period.

Proposal by BASF

25. No later than two weeks after the Effective Date, BASF shall submit the name or names of one or more natural or legal persons whom BASF proposes to appoint as the Monitoring Trustee to the Commission for approval. No later than one month before the end of the Trunemco Assets First Divestiture Period and/or [NSH line of research 1] Data Transfer and Licence First Divestiture Period (as applicable), or on request by the Commission, BASF shall submit a list of one or more persons whom BASF proposes to appoint as Divestiture Trustee to the Commission for approval. The proposal shall contain sufficient information for the Commission to verify that the person or persons proposed as Trustee fulfil the requirements set out in paragraph 23 and shall include:

(a) the full terms of the proposed mandate, which shall include all provisions necessary to enable the Trustee to fulfil its duties under these Commitments;

(b) the outline of a work plan which describes how the Trustee intends to carry out its assigned tasks;

(c) an indication whether the proposed Trustee is to act as both Monitoring Trustee and Divestiture Trustee or whether different trustees are proposed for the two functions.

Approval or rejection by the Commission

26. The Commission shall have the discretion to approve or reject the proposed Trustee(s) and to approve the proposed mandate subject to any modifications it deems necessary for the Trustee to fulfil its obligations. If only one name is approved, BASF shall appoint or cause to be appointed the person or persons concerned as Trustee, in accordance with the mandate approved by the Commission. If more than one name is approved, BASF shall be free to choose the Trustee to be appointed from among the names approved. The Trustee shall be appointed within one week of the Commission's approval, in accordance with the mandate approved by the Commission.

New proposal by the BASF

27. If all the proposed Trustees are rejected, BASF shall submit the names of at least two more natural or legal persons within one week of being informed of the rejection, in accordance with paragraphs 21 and 26 of these Commitments.

Trustee nominated by the Commission

28. If all further proposed Trustees are rejected by the Commission, the Commission shall nominate a Trustee, whom BASF shall appoint, or cause to be appointed, in accordance with a trustee mandate approved by the Commission.

II. Functions of the Trustee

29. The Trustee shall assume its specified duties and obligations in order to ensure compliance with the Commitments. The Commission may, on its own initiative or at the request of the Trustee or BASF, give any orders or instructions to the Trustee in order to ensure compliance with the conditions and obligations attached to the Decision.

Duties and obligations of the Monitoring Trustee

30. The Monitoring Trustee shall:

(i) propose in its first report to the Commission a detailed work plan describing how it intends to monitor compliance with the obligations and conditions attached to the Decision.

(ii) oversee, in close co-operation with the Hold Separate Managers, the on-going management of the Divestment Businesses with a view to ensuring its continued economic viability, marketability and competitiveness and monitor compliance by BASF with the conditions and obligations attached to the Decision. To that end the Monitoring Trustee shall:

(a) monitor the preservation of the economic viability, marketability and competitiveness of the Divestment Businesses, and the keeping separate of the Divestment Businesses from the business retained by the Parties, in accordance with paragraphs 10 and 11 of these Commitments;

(b) supervise the management of the Divestment Businesses as a distinct and saleable entity, in accordance with paragraph 12 of these Commitments;

(c) with respect to Confidential Information:

– determine all necessary measures to ensure that BASF does not after the Effective Date obtain any Confidential Information relating to the Divestment Businesses;

– in particular strive for the severing of the Divestment Businesses' participation in a central information technology network to the extent possible, without compromising the viability of the Divestment Businesses;

– make sure that any Confidential Information relating to the Divestment Businesses obtained by BASF before the Effective Date is eliminated and will not be used by BASF;

– decide whether such information may be disclosed to or kept by BASF as the disclosure is reasonably necessary to allow BASF to carry out the divestiture or as the disclosure is required by law; and

(d) monitor the splitting of assets and the allocation of Key Personnel between the Divestment Businesses and BASF or Affiliated Undertakings;

(iii) propose to BASF such measures as the Monitoring Trustee considers necessary to ensure BASF's compliance with the conditions and obligations attached to the Decision, in particular the maintenance of the full economic viability, marketability or competitiveness of the Divestment Businesses, the holding separate of the Divestment Businesses and the non-disclosure of competitively sensitive information;

(iv) review and assess potential Purchasers as well as the progress of the divestiture process and verify that, dependent on the stage of the divestiture process:

(a) potential Purchasers receive sufficient and correct information relating to the Divestment Businesses and the Key Personnel in particular by

reviewing, if available, the data room documentation, the information memorandum and the due diligence process, and

(b) potential Purchasers are granted reasonable access to the Key Personnel;

(v) act as a contact point for any requests by third parties, in particular potential purchasers, in relation to the Commitments;

(vi) provide to the Commission, sending BASF a non-confidential copy at the same time, a written report within 15 days after the end of every month that shall cover the operation and management of the Divestment Businesses as well as the splitting of assets and the allocation of [NSH line of research 1] Data Transfer and Licence Personnel so that the Commission can assess whether the business is held in a manner consistent with the Commitments and the progress of the divestiture process as well as potential Purchasers;

(vii) promptly report in writing to the Commission, sending BASF a non-confidential copy at the same time, if it concludes on reasonable grounds that BASF is failing to comply with these Commitments;

(viii) within one week after receipt of the documented proposal referred to in paragraph 18 and paragraph 19 of these Commitments (as applicable), submit to the Commission, sending BASF a non-confidential copy at the same time, a reasoned opinion as to the suitability and independence of the proposed Purchasers and the viability of the Divestment Businesses after the Sale and as to whether the Divestment Businesses are sold in a manner consistent with the conditions and obligations attached to the Decision, in particular, if relevant, whether the Sale of the Divestment Businesses without one or more Assets or not all of the Key Personnel affects the viability of the Divestment Businesses after the sale, taking account of the proposed purchaser;

(ix) assume the other functions assigned to the Monitoring Trustee under the conditions and obligations attached to the Decision.

31. If the Monitoring and Divestiture Trustee are not the same legal or natural persons, the Monitoring Trustee and the Divestiture Trustee shall cooperate closely with each other during and for the purpose of the preparation of the Trustee Divestiture Period in order to facilitate each other's tasks.

Duties and obligations of the Divestiture Trustee

32. Within the Trustee Divestiture Period, the Divestiture Trustee shall sell at no minimum price the Divestment Businesses to a purchaser, provided that the Commission has approved both the purchaser and the final binding sale and purchase agreement (and ancillary agreements) as in line with the Commission's Decision and the Commitments in accordance with paragraphs 18 and 20 of these Commitments. The Divestiture Trustee shall include in the sale and purchase agreement (as well as in any ancillary agreements) such terms and conditions as it considers appropriate for an expedient sale in the Trustee

Divestiture Period. In particular, the Divestiture Trustee may include in the sale and purchase agreement such customary representations and warranties and indemnities as are reasonably required to effect the sale. The Divestiture Trustee shall protect the legitimate financial interests of BASF, subject to BASF's unconditional obligation to divest at no minimum price in the Trustee Divestiture Period.

33. In the Trustee Divestiture Period (or otherwise at the Commission's request), the Divestiture Trustee shall provide the Commission with a comprehensive monthly report written in English on the progress of the divestiture process. Such reports shall be submitted within 15 days after the end of every month with a simultaneous copy to the Monitoring Trustee and a non-confidential copy to BASF.

III. Duties and obligations of the Parties

34. BASF shall provide and shall cause its advisors to provide the Trustee with all such co-operation, assistance and information as the Trustee may reasonably require to perform its tasks. The Trustee shall have full and complete access to any of BASF's or the Divestment Businesses' books, records, documents, management or other personnel, facilities, sites and technical information necessary for fulfilling its duties under the Commitments and BASF and the Divestment Businesses shall provide the Trustee upon request with copies of any document. BASF and the Divestment Businesses shall make available to the Trustee one or more offices on their premises and shall be available for meetings in order to provide the Trustee with all information necessary for the performance of its tasks.

35. BASF shall provide the Monitoring Trustee with all managerial and administrative support that it may reasonably request on behalf of the management of the Divestment Businesses. This shall include all administrative support functions relating to the Divestment Businesses which are currently carried out at headquarters level. BASF shall provide and shall cause its advisors to provide the Monitoring Trustee, on request, with the information submitted to potential purchasers, in particular give the Monitoring Trustee access to the data room documentation and all other information granted to potential Purchasers in the due diligence procedure. BASF shall inform the Monitoring Trustee on possible purchasers, submit lists of potential Purchasers at each stage of the selection process, including the offers made by potential Purchasers at those stages, and keep the Monitoring Trustee informed of all developments in the divestiture process.

36. BASF shall grant or procure Affiliated Undertakings to grant comprehensive powers of attorney, duly executed, to the Divestiture Trustee to effect the sale (including ancillary agreements), the Trunemco Assets Closing and the [NSH line of research 1] Data Transfer and Licence Closing (as applicable) and all actions and declarations which the Divestiture Trustee considers necessary or appropriate to achieve the sale and the Trunemco Assets Closing and the [NSH line of research 1] Data Transfer and Licence Closing (as applicable), including the appointment of advisors to assist with the sale process. Upon request of the Divestiture Trustee, BASF shall cause the documents required for effecting the sale and the Trunemco Assets Closing and the [NSH line of research 1] Data Transfer and Licence Closing (as applicable) to be duly executed.

37. BASF shall indemnify the Trustee and its employees and agents (each an ***Indemnified Party***) and hold each Indemnified Party harmless against, and hereby agrees that an Indemnified Party shall have no liability to BASF for, any liabilities arising out of the performance of the Trustee's duties under the Commitments, except to the extent that such liabilities result from the wilful default, recklessness, gross negligence or bad faith of the Trustee, its employees, agents or advisors.

38. At the expense of BASF, the Trustee may appoint advisors (in particular for corporate finance or legal advice), subject to BASF's approval (this approval not to be unreasonably withheld or delayed) if the Trustee considers the appointment of such advisors necessary or appropriate for the performance of its duties and obligations under the Mandate, provided that any fees and other expenses incurred by the Trustee are reasonable. Should BASF refuse to approve the advisors proposed by the Trustee the Commission may approve the appointment of such advisors instead, after having heard BASF. Only the Trustee shall be entitled to issue instructions to the advisors. Paragraph 37 of these Commitments shall apply *mutatis mutandis*. In the Trustee Divestiture Period, the Divestiture Trustee may use advisors who served BASF during the Divestiture Period if the Divestiture Trustee considers this in the best interest of an expedient sale.

39. BASF agrees that the Commission may share Confidential Information proprietary to BASF with the Trustee. The Trustee shall not disclose such information and the principles contained in Article 17 (1) and (2) of the Merger Regulation apply *mutatis mutandis*.

40. BASF agree that the contact details of the Monitoring Trustee are published on the website of the Commission's Directorate-General for Competition and they shall inform interested third parties, in particular any potential Purchasers, of the identity and the tasks of the Monitoring Trustee.

41. For a period of 10 years from the Effective Date the Commission may request all information from the Parties that is reasonably necessary to monitor the effective implementation of these Commitments.

IV. Replacement, discharge and reappointment of the Trustee

42. If the Trustee ceases to perform its functions under the Commitments or for any other good cause, including the exposure of the Trustee to a Conflict of Interest:

    (a) the Commission may, after hearing the Trustee and BASF, require BASF to replace the Trustee; or

    (b) BASF may, with the prior approval of the Commission, replace the Trustee.

43. If the Trustee is removed according to paragraph 42 of these Commitments, the Trustee may be required to continue in its function until a new Trustee is in place to whom the Trustee has effected a full hand over of all relevant information. The new Trustee shall be appointed in accordance with the procedure referred to in paragraphs 21-28 of these Commitments.

44. Unless removed according to paragraph 42 of these Commitments, the Trustee shall cease to act as Trustee only after the Commission has discharged it from its duties after all the Commitments with which the Trustee has been entrusted have been implemented. However, the Commission may at any time require the reappointment of the Monitoring Trustee if it subsequently appears that the relevant remedies might not have been fully and properly implemented.

Section G. The review clause

45. The Commission may extend the time periods foreseen in the Commitments in response to a request from BASF or, in appropriate cases, on its own initiative. Where BASF requests an extension of a time period, it shall submit a reasoned request to the Commission no later than one month before the expiry of that period, showing good cause**.** This request shall be accompanied by a report from the Monitoring Trustee, who shall, at the same time send a non-confidential copy of the report to BASF. Only in exceptional circumstances shall BASF be entitled to request an extension within the last month of any period.

46. The Commission may further, in response to a reasoned request from BASF showing good cause waive, modify or substitute, in exceptional circumstances, one or more of the undertakings in these Commitments. This request shall be accompanied by a report from the Monitoring Trustee, who shall, at the same time send a non-confidential copy of the report to BASF. The request shall not have the effect of suspending the application of the undertaking and, in particular, of suspending the expiry of any time period in which the undertaking has to be complied with.

Section G. Entry into force

47. The Commitments shall take effect upon the date of adoption of the Decision.

SCHEDULE

PART I

I. Introduction

1. The Divestment Businesses comprise the Trunemco Assets and the **[NSH line of research 1]** Data Transfer and Licence. This Part I presents information on the Trunemco Assets, which comprise BASF's global pipeline projects relating to nematode control seed treatment, known as 'Trunemco'. The Trunemco Assets essentially consist of all rights necessary for the Purchaser to obtain regulatory approvals for the use of Trunemco as a seed treatment product, and to manufacture and ultimately commercialise Trunemco.

2. Trunemco is a formulated product which relies on two known active ingredients: *bacillus* ***amyloliquefaciens*** **(**strain MBI 600), which is a biological (i.e. a bacteria that colonises plant roots and excludes pathogens); and **cis-jasmone, which is a semioc**hemical […]**.** In addition, Trunemco involves a standard formulation requiring know-how that will be possessed by any player active in seed treatment or biologicals. BASF's proprietary know-how relates to the specific combination of active ingredients for use as a nematode control seed treatment. Unlike conventional chemical nematicides, Trunemco repels (but does not kill) nematodes.

II. The Trunemco Assets

3. The Trunemco Assets consist of the entirety of the assets comprising BASF's global pipeline project for nematode control seed treatment, known as 'Trunemco', which is defined by the nematode repellent combination of MBI 600 and cis-jasmone (including all tangible and intangible assets, rights, liabilities and obligations). The Trunemco Assets include, but are not limited to:

   (a) all intellectual property related to Trunemco and *bacillus amyloliquefaciens* (strain MBI 600) – originally referred to as *bacillus subtilis* – in combination with cis-jasmone (the active ingredients in Trunemco) as a two-component mixture for use as a nematode control seed treatment, including but not limited to worldwide patents, trademarks, and copyrights. Specifically:

      (i) BASF IP relating to *bacillus amyloliquefaciens* (strain MBI 600) combined with cis-jasmone for use as a nematode control seed treatment will be exclusively licensed to the Purchaser […];

      (ii) BASF IP relating to *bacillus subtilis* in combination with cis-jasmone will be exclusively licensed to the Purchaser ([…]) for use as a nematode control seed treatment;

      (iii) in relation to cis-jasmone, BASF holds an exclusive licence to use […]. BASF commits to grant the Purchaser an exclusive sub-licence to cis-jasmone in relation to the manufacture and use of Trunemco as a nematode control seed treatment [...]. Furthermore, BASF will not

assert its rights under the exclusive licence from […] in any way that restricts the use of the Trunemco Assets by the Purchaser for nematode control seed treatment.

(iv) BASF will not assert its rights under any patents to restrict the use of the Trunemco Assets by the Purchaser for nematode control seed treatment in mixtures with any other active ingredient, under the provision that none of the other active ingredient is itself (as a compound or as part of a mixture of two or more active ingredients none of which is Trunemco) claimed by any patent owned, controlled or in-licensed by BASF.

(b) all product registrations and pending regulatory submissions related to Trunemco;

(c) all current formulations and those in development, as well as inter alia all developed processes, procedures, recipes, manuals, and quality control measures for the manufacture and formulation of Trunemco, including but not limited to protectable trade secrets;

(d) all data and analyses from Trunemco field trials, including ongoing trials, protocols, and studies and summaries of such studies;

(e) all sales and marketing assets, including BASF's marketing and distribution plans, all transferable market research conducted to date for Trunemco, the Trunemco website and domains, and Trunemco social media sites (to the extent that such websites, domains or social media sites are in existence at closing);

4. BASF commits to supply the Purchaser with MBI 600 under a supply agreement on the following basis post-closing:

(a) Prior to first market launch of Trunemco, BASF commits to provide such quantities of *MBI 600* to the Purchaser as are necessary for the continued development of the Trunemco Assets (e.g. testing materials) at the purchase price and conditions from a third party supplier that BASF enjoys for the respective quantities (hereinafter referred to as "variable cost" for the purpose of this paragraph 4).

(b) After first market launch of Trunemco, BASF commits to provide the Purchaser with a transitional commercial supply of *MBI 600* at variable cost for an initial period of [1-3 years].

(c) At the Purchaser's option, BASF commits to renewing the term of any MBI 600 supply agreement for up to two further periods of [0-1 year], for a total of up to [4-5 years] after the first market launch of Trunemco, on each occasion subject to the Commission's approval following consultation with the Monitoring Trustee and to be supplied at variable cost.

(d) Any subsequent supplies of MBI 600 will be based on commercial terms agreed with BASF and the Purchaser.

5. BASF will also use its best efforts to assist the Purchaser with taking over the continued negotiation of the supply agreement for cis-jasmone which BASF is currently negotiating with […], or where necessary, with the creation of new supply agreements for cis-jasmone, as the case may be, to be in place within such a timeframe as is reasonably required by the Purchaser to enable timely market launch; BASF will also provide the Purchaser with lists of third-party vendors that are known to be capable of supplying commercial quantities of cis-jasmone.

6. The Trunemco Assets will only require supply or services agreements between BASF and the Purchaser on a transitional basis; no long-term supply agreements will be required, unless desired by the Purchaser. BASF commits to enter into any such transitional agreements deemed necessary by the Monitoring Trustee. The basis upon which BASF will provide transitional supplies and services (aside from in relation to MBI 600 and cis-jasmone, which are dealt with in paragraphs 4 and 5 above) is set out in in more detail in Section III below.

7. At the written request of the Purchaser, BASF commits to providing training and information required by the Purchaser, delivered by appropriate specialists, to prepare the Purchaser's sales and marketing teams to begin selling the products comprising the Trunemco Assets subject to receipt of relevant registrations. Such training will be available for up to [0-1 year] following the written request of the Purchaser, with the option of two extensions of [0-6 months] each at the Purchaser's option. BASF commits to provide this support at variable cost, as calculated using BASF's standard accounting practices, excluding overhead costs.

8. BASF will provide to the Purchaser the option to offer employment to up to […] employees (in total) working on the Trunemco Assets, subject to the Commission's approval following the opinion of the Monitoring Trustee, including on whether these employees are required by the Purchaser. These employees, once identified by BASF in consultation with the Monitoring Trustee and approved by the Commission (following the opinion of the Monitoring Trustee), will be regarded as Key Personnel for the purposes of these Commitments. Any transfer of such Key Personnel to the Purchaser is also subject to all applicable employment laws.

III. Transitional Service Agreements, and Licensing Agreements Potentially Required to Support the Commitments

9. BASF and Purchaser shall negotiate the agreements required to support the Trunemco Assets. Transitional supplies or services will be provided by BASF at variable cost for an initial period of [0-1 year] after the written request of the Purchaser.

(a) At the Purchaser's option, BASF commits to renewing the term of any transitional agreements for up to two further periods of [0-1 year], for a total of up to [1-3 years] after the written request of the Purchaser, on each occasion

subject to the Commission's approval following consultation with the Monitoring Trustee.

(b) Any subsequent supplies or services will be based on commercial terms agreed between BASF and Purchaser.

10. BASF commits to enter into any such transitional agreements deemed necessary by the Monitoring Trustee. The Parties currently contemplate the following post-sale transitional services with the Purchaser, though this is subject to further negotiation:

Regulatory Approvals

11. BASF will assist the Purchaser in applying for the Purchaser's [Jurisdiction A] [Jurisdiction B] and, at the discretion of the Purchaser, EU and [Jurisdiction C] product registrations to complete the transfer of such registrations. BASF will also transfer its Maximum Residue Limit (*MRL*) dossier and any other pending dossiers that are submitted to regulators by Purchaser Closing. BASF will also assist the Purchaser in responding to inquiries or follow-up questions from the [regulators] regarding BASF's updated toxicology studies. This support is expected to continue for up to [0-1 year]. While a regulatory strategy for [Jurisdiction C] and Europe has not been developed, BASF commits to transfer any documents or know-how that has been developed towards that end.

Product Testing / Ongoing Regulatory Studies

12. In addition to transferring data and records to the Purchaser, BASF will support the Purchaser with a combination of completing advanced ongoing studies, completing trials planned for the current growing season, and/or transferring the lab analysis portion of recently initiated studies to Purchaser for both product testing purposes and regulatory purposes, to the extent that any studies are currently underway. The extent of support will depend on the level of progress in the respective studies and Purchaser's capabilities. BASF will also assist Purchaser in applying for Experimental Use Permits (*EUPs*) in required jurisdictions. BASF will provide support in transferring its Material Transfer Agreements (*MTAs*) with third-parties and accompanying research data, and use reasonable efforts to obtain any third party consents needed in this regard. Finally, in completing applicable ongoing studies, BASF will also provide consulting support to Purchaser to supplement its understanding of Trunemco formulations in development for row crops and other specialty crops, as well as its understanding of formulation compatibility, application, dust-off, stability, plantability, and seed safety. This support is expected to continue for up to [0-1 year].

Production / Application / Supply Chain Processes

13. BASF will provide consulting support to the Purchaser in developing the Purchaser's plans for introducing Trunemco into its seed treatment facilities, and will also provide general advice to the Purchaser, on request, concerning its own manufacturing site readiness, maintenance of quality controls, and development of treatment application

protocols. BASF will also support Purchaser in developing its understanding of Trunemco application methodology and chemistry and will provide technical and troubleshooting support.

Intellectual Property

14. BASF will provide documents necessary to license patents / patent applications and trademarks / trademark applications to the Purchaser and will support the Purchaser in responding to inquiries/prosecution of Trunemco-related patents and trademarks. BASF will also support the transition of any pending invention disclosures. It is anticipated that such support will continue for earlier of three months or until assignments are complete.

Marketing

15. BASF will make available to the Purchaser all marketing, sales and distribution plans for Trunemco which have been developed prior to closing.

Other

16. If there is any asset or personnel which is not covered by this Schedule but which is both used (exclusively or not) in the Trunemco Assets and necessary for the continued viability and competitiveness of the Divestment Business, that asset or an adequate substitute will be offered to potential purchasers.

PART II

I. Introduction

1. The Divestment Businesses comprise the Trunemco Assets and the [NSH line of research 1] Data Transfer and Licence. This Part II presents information on the [NSH line of research 1] Data Transfer and Licence.

II. [NSH line of research 1] Data Transfer and Licence

2. The [NSH line of research 1] Data Transfer and Licence consist of the entirety of the assets comprising the package of intellectual property rights relating to [NSH line of research] class herbicide chemistry type [mode of action for NSH line of research 1] inhibitor that are transferred to BASF under the under the terms of the commitments in M.8084 – *BASF / Monsanto*, […]. In accordance with these terms, the [NSH line of research 1] Data Transfer and Licence includes but is not limited to:

   (a) transfer to the Purchaser of all data and know-how gathered by Bayer up to the Effective Date from all field trials conducted on [NSH line of research 1] Chemistries as relating to all non-selective uses as well as information on the structure, and [NSH line of research 1] Data Transfer and Licence Samples, of the relevant molecules;

   (b) grant to the Purchaser of a perpetual, exclusive, worldwide licence[1] of all IP rights and know-how relating to the BASF Divestment Business's [NSH line of research 1] Chemistries existing at the Effective Date for all non-commercial and commercial applications in the field of non-selective uses, including:[2]

      (i) for the control of unwanted vegetation for example in permanent crops and plantation crops (such as trees, nuts and vines), on roadsides, squares, industrial sites, airports or railway tracks; or

      (ii) for the burn-down application, for example in farm crops; and

      (iii) for the application on herbicide tolerant field crops (HT crops) in which the tolerance is conferred by man-made mutation or transgenic modification.

3. Explicitly excluded from this licence is any selective use in any plant which is tolerant by nature.

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1 For the avoidance of doubt, by granting the Purchaser an exclusive licence to the non-selective uses, BASF and Bayer will no longer have the right to use the IP rights and know-how covered by the [NSH line of research 1] Data Transfer and Licence for these non-selective uses while the Purchaser will not have the rights to use the IP rights and know-how covered by the [NSH line of research 1] Data Transfer and Licence for selective uses.

2 […].

4. The [NSH line of research 1] Data Transfer and Licence will require an exclusive licence or licences for the relevant data and know-how. There are no other transitional or long-term agreements required between BASF or Bayer (as applicable) and the Purchaser.

5. The Key Personnel to be transferred, subject to complying with all applicable employment laws, for the [NSH line of research 1] Data Transfer and Licence are set out in the following table:

Key Personnel	Role
[…]	[…]
[…]	[…]

6. In addition to the above, the [NSH line of research 1] Data Transfer and Licence includes: (i) a material transfer agreement on terms substantially similar to those granted by BASF to […] (as per the […], attached as Annex I), which includes a research license for the Purchaser […]; and (ii) an option to a non-exclusive development and commercial license, on commercially reasonable terms, to […] that will be exercisable if the Purchaser develops a registrable [NSH line of research 1] class herbicide chemistry type [mode of action for NSH line of research 1] inhibitor as defined in the [NSH line of research 1] Data Transfer and License. The non-exclusive development and commercial license would permit the Purchaser to develop a [mode of action for NSH line of research 1] HT trait in […].

7. If there is any asset or personnel which is not covered by this Schedule but which is both used (exclusively or not) in the [NSH line of research 1] Data Transfer and Licence and necessary for the continued viability and competitiveness of the Divestment Business, that asset or an adequate substitute will be offered to potential purchasers.

Annex I

[…]