





## **b**-solutions

### **FINAL REPORT BY THE EXPERT**

Advice Case: Cross-border transport of CO2 as a resource for industrial processes

Advised Entity: Provincie Oost-Vlaanderen – Euregio Scheldemond, BE-NL

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## 1. Description Obstacle by the Euregion Scheldemond

North Sea Port – located at the Belgian/Dutch border between Ghent and Terneuzen – plays a significant role in stimulating research concerning circular economy and innovation. More specific, North Sea Port is a partner in 'Smart Delta Resources', together with the provinces Zeeland, Oost-Vlaanderen and some of the leading industrial enterprises located in the area(https://www.smartdeltaresources.com/en).

"Smart Delta Resources is an initiative taken by eleven energy- and feedstock intensive companies searching for a reduction in their use of energy and feedstock though industrial symbiosis. SDR companies in Steel, Energy, Chemical and Food Industry work together to create industrial connections and develop interesting business cases. The industrial symbiosis between the various sectors in the region has economic optimization as a starting point, but in time it also contributes to making their processes more sustainable. This collaboration contributes to the national targets for sustainable economic development, reduction of greenhouse gases such as  $CO_2$  and reduction of the fossil footprint.<sup>17</sup>"

The platform is supported by the Province of Zeeland and North Sea Port. The "NV Economische Impuls Zeeland" facilitates the platform. The partners try to stimulate ambitious projects to achieve objectives related to the concept of a circular economy and to contribute to the climate objectives of both Dutch and Belgian governments. Yet, a major impediment to the realisation of such projects is the fact that – according to the Euregio Scheldemond and based on experiences of North Sea Port – the procedures and requirements for getting permits to transport 'waste material' across the border is today still hampered by administrative complexity.

In this context the question has arisen whether for instance CO2 or CO as a by-product of production processes could be used for the production of other companies. Due to the geographical situation of North Sea Port that would mean: activities that will involve stakeholders on both sides of the Dutch-Belgian border. To make that possible, new pipelines and other infrastructure have to be built across the border with the relevant permits and following European, national, regional and international legislation. The underlying assumption of the Euregio Scheldemond is that North Sea Port and companies located in the harbour area are facing severe obstacles that are hindering this kind of improvement in the field of sustainability and circular economy.

#### Steel2Chemicals

Waste gases from steel industry consists typically of 15 to 25 % CO2 and 18 to 30% CO and other compounds such as nitrogen, hydrogen and methane.<sup>2</sup> Under the INTERREG Programme Flanders-The Netherlands, a study has analysed the market situation for Carbon Capture Usage (CCU) technologies. The authors also presented a list of reasons found in recent literature why there is an interest in CCU.

<sup>&</sup>lt;sup>1</sup> See the own description of Smart Delta resources on <a href="https://www.smartdeltaresources.com/en">https://www.smartdeltaresources.com/en</a>.

<sup>&</sup>lt;sup>2</sup> See the technical preconditions for "Carbon Capture Usage" in: Miet van Dael, Market study report CCU, Vito, December 2018.







Table 1: Literature analysis CCU technologies by van Dael, 2018

Reasons for CCU interest					
To create a revenue stream for CO <sub>2</sub> abatement from fossil fuel use based on consumer demand					
for CO <sub>2</sub> -containing products.					
Avoid greenhouse gas emissions					
Alternative for carbon capture and storage (CCS)					
Energy security					
To make use of specific attributes of CO <sub>2</sub> in commercially competitive applications					
To remediate inorganic wastes from industrial processes					
To decarbonize the process industry and transportation sector					
Sequestration of significant quantities of CO <sub>2</sub> in building materials					
Energy storage options					
CCU can provide revenues to fund (partially) CCS projects					
Replace fossil or biobased feedstock					
Feedstock and price security					
Contribute to a circular economy					
Reduce the complexity of chemical reaction pathways					
Cost control for the supply of fuels					

Source: Miet van Dael, 2018

One of these prominent individual projects concerning CCU is "Steel2Chemical". ArcelorMittal's factory is located in the area of North Sea Port on the Belgian side. The world's largest steel manufacturer emits CO<sub>2</sub> due to the production process of steel. The chemical company Dow Benelux, located some twenty kilometers to the north in Terneuzen in the Netherlands, is interested in using other feedstock than oil for its production process. The Chemical company Dow Benelux has developed some technology to repurpose residual gasses as feedstock for plastic production and is currently working on the technical feasibility.<sup>3</sup>

The underlying idea is that ArcelorMittal will deliver its residual gases to Dow Benelux. This could allow the steel producer to reduce its emission of CO and CO₂ and make the chemical company less dependent on oil. At the moment, the feasibility of the project is evaluated and according to the Euregio Scheldemond, after 2022 a decision whether the project can be implemented will be expected. A plant for Carbon sequestration under the name Carbon2Value is already in operation at AccelorMittal in Genth since 2018. In 2019, Dow Benelux started with the construction of a pilot plant under the name Steel2Chemicals where the company is investigating in practice how the CO can be used, too. This substance is converted with hydrogen into synthetic naphtha, food for the crackers. The pilot installation will be in operation in 2020.

<sup>&</sup>lt;sup>3</sup> See the description of the technical background on https://www.smartdeltaresources.com/en/news/fd-arcelor-and-dow-solve-each-others-problems.







#### Box 1: Description of the construction of a pilot plant by Down Benelux

#### Planning: start of construction of pilot plant 2019

Parties involved: Dow, ArcelorMittal, Tata Steel, ECN, U Gent, ISPT.

Subsidy: Rijksdienst voor Ondernemend Nederland (RVO).

Revaluing residual products is an issue that is increasingly on the agenda of companies and governments. After all, why resort to 'new' raw materials when you can use existing substances? At Dow, too, circular economics is of paramount importance. That is why we sought cooperation with other companies: ArcelorMittal's steel plants in Ghent and Tata Steel in IJmuiden. The production of steel releases carbon monoxide (CO) and carbon dioxide (CO2). Dow already captures the CO2 for the steel shop (see project Carbon2Value), but the CO can also be used. This substance can be converted with hydrogen into synthetic naphtha, an ideal food for the crackers. And let Dow just 'keep' hydrogen in its own production process. In recent years, the lab has been investigating how we can use these residual products to produce a usable food for the crackers. Now it is time to take the next step.

At the beginning of July 2018, Dow received a subsidy from the Rijksdienst voor Ondernemend Nederland (RVO) for the Steel to Chemicals project. With this amount and additional investments from Dow, we are building a pilot plant at ArcelorMittal in Ghent. This mini factory, the size of a sea container, will be built in 2019. In the plant, we are investigating in practice how best to produce synthetic gas (syngas) and convert it into the desired product. The composition of the carbon monoxide flow from the steel shop is different from that of the pure gases that we tested in the lab. The research takes four to five years, during which time the plant will also move to IJmuiden. If the pilot turns out to be successful and, above all, economically feasible, we will look at whether we can build a demonstration plant on a larger scale.

Through this special cooperation in this project, we will reduce the CO2 emissions of the steel industry. In addition, Dow needs to rely less on fossil fuels. A win-win situation! The problem of the steel manufacturers and Dow is not an isolated one. That is why this can be a good example project for partnerships between other companies worldwide.

Source: Dow Benelux<sup>4</sup>

Currently, the Euregio Scheldemond and other key players are working on an inventory of cross-border obstacles that will also cover cross-border pipelines and CO2 transport. This b-solution project will be a contribution to this exercise. The assumption of the Euregio Scheldemond is that only a small amount of the obstacles fall within the jurisdiction of either the Flemish provinces or the Dutch province. Most of the obstacles are related to legislation of the national levels or on the level of the Flemish government. In addition, the expectation is that the complexity of EU and international law play also an important role.

<sup>&</sup>lt;sup>4</sup> See the companies press communication on: <a href="http://www.dowduurzaam.nl/initiatief/steel-to-chemicals">http://www.dowduurzaam.nl/initiatief/steel-to-chemicals</a>.







The following initial observations are made by the Euregio Scheldemond:

- 1. There are complex and confusing rules and requirements for constructing cross-border pipelines within the North Sea Port area.
- 2. There is a lack of clear information on cross-border possibilities also for the Steel2Chemicals-project.
- 3. The requirements for getting permits for constructing and using a pipeline network and transporting CO2 as a waste-product are very complex.
- 4. The project can be also slowed down by EU and international law. While primarily aimed at preventing the export of wastes to non-Parties, article 6 of the London Protocol also has the effect of prohibiting the transboundary transfer of carbon dioxide for the purposes of geological storage.
- 5. The situation is also complex due to national designated environmental areas and strategic spatial planning visions for the larger area.

From the perspective of the Euregio Scheldemond, there is more at stake as just the mentioned projects. This precedent could encourage other companies to start pilot projects with a cross-border character. The precedent could also lead to more clarity concerning the use of waste material as a resource when crossing the border. And it could also lead to more insights into the allocation of emission rights between companies that exchange emissions as a resource. The initiatives in question are located at the border between the municipality of Terneuzen (NL) and the city of Ghent (BE). Furthermore on a Nuts-2 level, the border is shared by the Provinces of Zeeland (NL) and East-Flanders (BE). However, the assumption is that the particular cross-border obstacles refer to the entire Dutch-Belgian border and most likely also many other borders within the EU.

Photo 1: The pilot installation Carbon2Value of ArcelorMittal in Genth in the harbour North Sea Port



Source: North Sea Port







# 2. Indication of the Legal/Administrative Dispositions causing the Obstacle described by the Advisor

This case is to some extent very different from other b-solution cases. The advisor was not only confronted with a multitude of different legal and political questions concerning the issue, but as well with a multitude of ongoing feasibility studies. It soon became clear that due to the modest approach of b-solutions with respect to time and resources, the research cannot be compared to the comprehensive studies that were simultaneously going on in the field. In the course of the work, it was necessary to wait for certain developments. In particular, the advisor waited for the comprehensive study that has been published only in the second half of 2019 "Clean Underground Sustainable Transport (CUST)", written by Royal Haskoning (et al). This comprehensive research was done by a big number of researchers, who conducted many interviews with different stakeholders from companies and authorities. It was based on a previous study published in 2018 by CE Delft. In this respect, the recent comprehensive 2019 study serves of course as a very important background document for this analysis.

The advisor tried to avoid the duplication of what has been done by the research consortium. That means in this paper we describe the complexity and legal challenges as we analysed it as a result of ITEMs own work for North Sea Port (2019). Otherwise, the background information is based on latest research done by the grand consortium already mentioned. There are many different angles to tackle the problem. Starting with the necessity to understand Dutch and Belgian legal procedures in the field of permitting. In addition, one has to clarify the meaning of international and EU provisions with respect to different aspects of cross-border pipelines. It became clear that the added-value of this small research would be to try to answer finally the particular question whether a future ECBM could help to solve some of the problems.

In order to better understand the context, the following table highlights the most important possible projects with respect to CO2-reduction. This illustrates the fact that Steel2chemicals is for instance only one out of many promising projects. In this case, the technical term is CO2-usage. It is important to distinguish CO2-usage from CO2-storage: CO or CO2 from a production process is *reused* in the course of another production process.

<sup>&</sup>lt;sup>5</sup> References are made to the Dutch version of the Study: "Onderzoek Clean Underground Sustainable Transport (CUST)", Authors: Team Cust, (Royal Haskoning, CE Delft, M-tech, sitech), 2019.

<sup>&</sup>lt;sup>6</sup> See CE Delft (2018), Roadmap towards a climate neutral industry in the Delta region, authors: Marit van Lieshout, Frans Rooijers, Harry Croezen.







Table 2: Projects with respect to CO2 reduction, infrastructure and timeline

Priorities	Projects	Figure 2	Year	Companies
Electricity & Hydrogen	Hydrogen network	С	2030	ArcelorMittal, Dow, North Sea Port, Trinseo,
	Gent - Vlissingen			Sabic, Yara, Zeeland Refinery
	Electrolyser 100 MW	В	2025	ArcelorMittal, Dow, Engie, ICL-IP, Yara, Zeeland
				Refinery,
	Extra x00 MW per industry	Α	2035	ArcelorMittal, Cargill, Dow, ICL-IP, Lamb-
	direct access to wind			Weston Kruiningen, North Sea Port, Sabic,
	electricity			Trinseo, Yara , Zeeland Refinery,
Circular Feedstock	250,000 tons plant for	D	2030	ICL-IP, North Sea Port, Trinseo, Zeeland
	circular feedstock supply			Refinery
CO₂ storage and usage	1.7 Mton CCS	Е	2030	ArcelorMittal Gent, Cosun, Dow, Engie
				Knippegroen, North Sea Port, Yara, Zeeland
				Refinery
	3.7 Mton CCU	Н	2030	ArcelorMittal, Dow, Yara

Source CE Delft, 2018

The Dutch government has ambitious objectives with respect to Carbon Capture Storage (CCS) and Carbon Capture Usage (CCU). According to estimates of CE Delft, by 2030 the region around North Sea Port can capture 1.7 million tonnes of CO2 related to feedstock production (reformation of natural gas to hydrogen). By 2030 CCU in the region may increase to 3.7 million tonnes of CO2. A significant portion may be realised by projects on the usage of CO gas of ArcelorMittal, as feedstock for the production of chemicals at Dow. Dow will create so-called syngas by combining carbon monoxide gas (CO) from the Arcelor blast furnaces with their own excess hydrogen (H2). Eventually the existing Dow crackers in Terneuzen should produce the building blocks for plastic (polyethylene).

Earlier studies have shown the business case for the technology. The capturing costs vary from under 20 €/tonne for the first million tonne, increasing to 40-60 €/tonne for the less concentrated.<sup>9</sup> The current consortium that is dealing with CO2 storage and usage is investigating what the technical conditions are and how feasible the project is.<sup>10</sup>

As a result of ITEM's work for North Sea Port, the following initial inventory has been developed with respect to potential legal obstacles for cross-border transport, storage or reuse of CO2. The relevant Dutch or Belgian legislation is shown in the footnote (with the original Dutch titles and numbering).

<sup>&</sup>lt;sup>7</sup> See CE Delft: CE Delft (2018), Roadmap towards a climate neutral industry in the Delta region (authors: Marit van Lieshout, Frans Rooijers, Harry Croezen), page 21.

<sup>&</sup>lt;sup>8</sup> See also Het Financiele Dagblad "Arcelor and Dow solve each others problems", of 9 February 2017. Published on the homepage of Small Delta Resources, <a href="https://www.smartdeltaresources.com/en/news/fd-arcelor-and-dow-solve-each-others-problems">https://www.smartdeltaresources.com/en/news/fd-arcelor-and-dow-solve-each-others-problems</a>.

<sup>&</sup>lt;sup>9</sup> Ibid.

<sup>&</sup>lt;sup>10</sup> According to the study of CE Delft (2018) the following partners are involved in the first phase of the project: Yara, Zeeland Refinery, Arcelor Mittal, Dow and North Sea Port with the gas network operating companies Gasunie, Fluxys and Enduris.







Table 3: Potential cross-border infrastructure, problems and the legal background analysed by ITEM and North Sea Port

Problem described by	North Sea Port	Legal background		
Development of infrastructure  Related to sustainability and circular economy  Example CO2 pipeline  Problem: The harbour company takes note of the necessities related to the development of cross-border infrastructure to stimulate sustainability and the circular economy. Problem: uncertainties and complexities concerning the legal rules for cross-border CO2 transport	<ul> <li>The construction of pipelines for cross-border transport of CO2 is regarded as very complex</li> <li>So far complex situation owing to permits with diverging national procedures,; nationally defined environmental objectives; spatial planning rules as limiting factor in cross-border CO2-transport</li> <li>There is uncertainty with respect to the application of EU legislation in the field of carbon capture and storage, Emissions trading and Shipment of waste</li> <li>There are uncertainties in the case of CO2 transport through pipelines due to international law</li> <li>For instance, the implementation of the 1996 London Protocol raises questions (ratification in NL 24 September 2008, ratification Belgium on 13 February 2006 with scrutiny). Due to amendments of the protocol,</li> </ul>	<ul> <li>International: London Protocol<sup>12</sup> <ul> <li>Since 2007 (amendment of article 6 in 2006), this treaty provides for the possibility of storing CO2 in the seabed. Today, it is still not possible to export CO2 by ship to foreign storage areas. The amended convention (October 2009) has not yet been ratified by a sufficient number of member states to enter into effect.<sup>13</sup> </li> <li>EU: Directive 2009/31/EC CO2 capture and storage (CCS Directive),<sup>14</sup> </li> <li>Waste Shipment Regulation (2006/1036/EC)</li> <li>CCU (capture and usage of CO2), if CO2 is reused in a consistent way it can be justified that WSR does not apply;</li> <li>CCS (Carbon capture and storage), CO2 as waste. The holder of the waste must then apply for a WSR decision. However, when the CO2 is collected for geological storage in accordance with the European CCS Directive this does not fall within the scope of the WSR<sup>15</sup>.</li> <li>Directive 2009/29/EG Emissions trading system (ETS)<sup>16</sup></li> <li>NL:</li></ul></li></ul>		

12 1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972.

<sup>14</sup> RICHTLIJN 2009/31/EG VAN HET EUROPEES PARLEMENT EN DE RAAD van 23 april 2009 betreffende de geologische opslag van kooldioxide en tot wijziging van Richtlijn 85/337/EEG van de Raad, de Richtlijnen 2000/60/EG, 2001/80/EG, 2004/35/EG, 2006/12/EG en 2008/1/EG en Verordening (EG) nr. 1013/2006 van het Europees Parlement en de Raad.

<sup>&</sup>lt;sup>13</sup> See CUST, 2019, 113.

<sup>&</sup>lt;sup>15</sup> According to the analysis presented in "Onderzoek Clean Underground Sustainable Transport (CUST)", Authors: Team Cust, (Royal Haskoning, CE Delft, M-tech, sitech), 2019, page 113.

<sup>&</sup>lt;sup>16</sup> RICHTLIJN 2009/29/EG VAN HET EUROPEES PARLEMENT EN DE RAAD van 23 april 2009 tot wijziging van Richtlijn 2003/87/EG teneinde de regeling voor de handel in broeikasgasemissierechten van de Gemeenschap te verbeteren en uit te hreiden

<sup>&</sup>lt;sup>17</sup> Algemene wet bestuursrecht; Besluit milieueffectrapportage; Wetboek van Burgerlijke Rechtsvordering; Wet algemene bepalingen omgevingsrecht; Wet van 29 januari 2009, houdende regels met betrekking tot het beheer en gebruik van watersystemen (Waterwet); Besluit van 30 november 2009 houdende regels met betrekking tot het beheer en gebruik van watersystemen (Waterbesluit); Wet van 6 juni 2011 tot wijziging van de Mijnbouwwet in verband met de implementatie van EU richtlijn 2009/31/EG van het Europees Parlement en de Raad van 23 april 2009 betreffende de geologische opslag van kooldioxide [...]; Besluit van 29 augustus 2011, houdende wijziging van het Mijnbouwbesluit en twee andere besluiten in verband met bepalingen voor het permanent opslaan van CO2; Regeling van de Minister van Economische Zaken,







	it seems possible to ask for		0	Emissions trading: NL
	cross-border permits.11			national rules <sup>18</sup>
	•	•	<u>BE</u> :	
	<ul> <li>There are questions with</li> </ul>		0	CO2 storage:
	respect to diverging safety			<u>comprehensive</u>
	regulations for pipelines			implementing acts,
	within Dutch and Belgian			federal and Flemish <sup>19</sup>
	legislation		0	Emissions trading:
				Decision Flemish
				Government amending
				Decision of 7 December
				2007 on emissions
				trading, 4 September
				2009; Decision Flemish
				government on
				emissions trading of emissions rights of
				greenhouse gases and
				installations and the
				application of flexible
				mechanisms 20 April
				2012
L				

Landbouw en Innovatie van 13 september 2011, nr. WJZ / 11070067, houdende wijziging van de Mijnbouwregeling in verband met bepalingen voor het permanent opslaan van CO2; Burgerlijk wetboek Boek 6

natuur en landbouw.

<sup>&</sup>lt;sup>11</sup> Voor de Juridische kwesties omtrent het 1996 London Protocol en het grensoverschrijdende CO2-transport, zie: https://hub.globalccsinstitute.com/publications/offshore-co2-storage-legal-resources/london-protocol#developments <sup>18</sup> Regeling van de Minister van Volkshuisvesting, Ruimtelijke Ordening en Milieubeheer van 23 september 2010, nr. DGM/K+L2010025875, tot wijziging van de Regeling monitoring handel in emissierechten in verband met het verstrekken en de kwaliteit van gegevens benodigd voor het aanpassen van de hoeveelheid broeikasgasemissierechten voor de hele Unie en het berekenen van de kosteloze toewijzing van broeikasgasemissierechten voor de periode 2013-2020; Wet van 19 april 2012 tot wijziging van de Wet milieubeheer en de Wet op de economische delicten ten behoeve van de implementatie [...] (herziening EG-richtlijn handel in broeikasgasemissierechten); Besluit van 16 mei 2012 tot wijziging van het Besluit handel in emissierechten; Regeling van de Staatssecretaris van Infrastructuur en Milieu van 13 juni 2012, nr. IenM/BSK-2012/63209, tot wijziging van de Regeling monitoring handel in emissierechten [...], alsmede in verband met de Aanpassingswet handel in emissierechten II en enkele andere verbeteringen; Besluit van 13 juni 2012, houdende vaststelling van het tijdstip van inwerkingtreding van onderdelen van de wet van 19 april 2012 tot wijziging van de Wet milieubeheer en de Wet op de economische delicten ten behoeve van de implementatie van onder meer richtlijn nr. 2009/29/EG (herziening EG-richtlijn handel in broeikasgasemissierechten) (Stb. 2012, 195), [...]; Besluit van 13 juni 2012, houdende vaststelling van het tijdstip van inwerkingtreding van onderdelen van de wet van 19 april 2012 tot wijziging van de Wet milieubeheer en de Wet op de economische delicten ten behoeve van de implementatie van onder meer richtlijn nr. 2009/29/EG (herziening EG-richtlijn handel in broeikasgasemissierechten) (Stb. 2012, 195), [...]; Regeling van de Staatssecretaris van Infrastructuur en Milieu, van 13 juni 2012, nr. IENM/BSK-2012/86244, houdende aanwijzing van de veiler voor het veilen van broeikasgasemissierechten (Regeling aanwijzing veiler broeikasgasemissierechten) 19 13 JUNI 1969. - [Wet inzake de exploratie en de exploitatie van niet -levende rijkdommen van de territoriale zee en het continentaal plat]. (Opschrift vervangen bij (W 1999-04-22/47, art. 26, 003; Inwerkingtreding: 20-07-1999)); VLAAMSE OVERHEID - 8 MEI 2009. - Decreet betreffende de diepe ondergrond, (incl. erratum); FEDERALE OVERHEIDSDIENST ECONOMIE, K.M.O., MIDDENSTAND EN ENERGIE - 5 AUGUSTUS 2011. - Koninklijk besluit tot wijziging van het koninklijk besluit van 11 oktober 2000 betreffende de toekenning van individuele vergunningen voor de bouw van installaties voor de productie van elektriciteit; VLAAMSE OVERHEID - 15 JULI 2011. - Besluit van de Vlaamse Regering tot uitvoering van het decreet van 8 mei 2009 betreffende de diepe ondergrond en tot wijziging van diverse besluiten; VLAAMSE OVERHEID -Besluit van de Vlaamse Regering tot wijziging van het besluit van de Vlaamse Regering van 15 juli 2011 tot uitvoering van het decreet van 8 mei 2009 betreffende de diepe ondergrond en tot wijziging van diverse besluiten, met het oog op het invoegen van nadere regels over de geologische opslag van koolstofdioxide, 6 JUNI 2014; Besluit van de Vlaamse Regering tot wijziging van het besluit van de Vlaamse Regering van 15 juli 2011 tot uitvoering van het decreet van 8 mei 2009 betreffende de diepe ondergrond en tot wijziging van diverse besluiten, met het oog op het invoegen van nadere regels over de geologische opslag van koolstofdioxide, 6 JUNI 2014; Besluit van de Vlaamse Regering tot wijziging van het besluit van de Vlaamse Regering van 15 juli 2011 tot uitvoering van het decreet van 8 mei 2009 betreffende de diepe ondergrond en tot wijziging van diverse besluiten, met het oog op het invoegen van nadere regels over de geologische opslag van koolstofdioxide, 6 JUNI 2014; VLAAMSE OVERHEID - 30 JUNI 2017. - Decreet houdende diverse bepalingen inzake omgeving,







<ul> <li>External safety:</li> <li>NL: Decision on external safety (Bevi, risk standards)</li> <li>BE: Decree (Decreet) General Environmental Policy</li> </ul>
<ul> <li>Pipelines:</li> <li>NL: Decision external safety (Bevb) (distances/risk, calculation methodology)</li> <li>BE: Guidelines/handbook, underground pipelines, (also handbook electricity lines)</li> </ul>

Own compilation ITEM

The inventory in cooperation with North Sea Port was done before the comprehensive CUST study was published. In the following, the different aspects described as potential problems in the table above, will be discussed in the light of the new results of the study and recent developments.

#### The question of International law: the London Protocol

The "Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972", the "London Convention" for short, is one of the first global conventions to protect the marine environment from human activities and has been in force since 1975. Its objective is to promote the effective control of all sources of marine pollution and to take all practicable steps to prevent pollution of the sea by dumping of wastes and other matter. Currently, 87 States are Parties to this Convention. In 1996, the "London Protocol" was agreed to further modernize the Convention and, eventually, replace it. Under the Protocol all dumping is prohibited, except for possibly acceptable wastes on the so-called "reverse list". The Protocol entered into force on 24 March 2006 and there are currently 51 Parties to the Protocol.<sup>20</sup>

As shown in the table, since 2007 the London Protocol treaty provides for the possibility of storing CO2 in the seabed. Today, it is still not possible to export CO2 by ship to foreign storage areas. The amended convention (October 2009) has not yet been ratified by a sufficient number of member states. This could have been a problem, if in one of the CUST projects instead of transporting gases in pipelines the question of transport by ship could be relevant. However, as reported by the International Maritime Organisation on 14 October 2019, the transboundary export of carbon dioxide (CO2) for the purpose of carbon capture and storage (or "sequestration") can now be provisionally allowed under certain circumstances, Parties to the London Protocol have agreed. In October 2019 they adopted a resolution to allow provisional application of an amendment to article 6 of the Protocol to allow sub-seabed geological formations for sequestration projects to be shared across national boundaries. As already mentioned, the 2009 amendment to the London Protocol allows for sub-seabed geological formations for sequestration projects to be shared across national boundaries – effectively allowing CO2 streams to be exported for CCS purposes (provided that the protection standards of all other London Protocol requirements have been met). To do this, the Parties concerned will need to deposit a declaration of provisional application and provide notification of any agreements or arrangements with the

<sup>&</sup>lt;sup>20</sup> Definition and description following the official presentation of the International Maritime Organisation (IMO), http://www.imo.org/en/OurWork/Environment/LCLP/Pages/default.aspx.







Secretary-General of the International Maritime Organization (IMO).<sup>21</sup> The technique may be appropriate for large single point CO2 emission sources such as power stations, chemical and cement plants and steelworks. Following these latest developments, the London protocol seems to be no obstacle for most of the CUST projects.

#### The question of Emissions trading

The EU emissions trading system (EU ETS) is a cornerstone of the EU's policy to combat climate change and has been developed as a key tool for reducing greenhouse gas emissions cost-effectively. It is the world's first major carbon market. After each year a company must surrender enough allowances to cover all its emissions, otherwise heavy fines are imposed. If a company reduces its emissions, it can keep the spare allowances to cover its future needs or else sell them to another company that is short of allowances.

The ETS regulates the greenhouse gas emissions of some 11,000 companies, together accounting for 45 percent of Europe's emissions. Approximately 450 companies in the Netherlands fall under the ETS regime, of which 20 percent is responsible for 90 percent of total Dutch CO2 emissions covered by EU-ETS. These are large, energy-intensive companies in the electricity sector, refining industry, chemical industry and the metal sector, such as Shell, Exxon, Tata Steel, Dow Benelux, Akzo and Chemelot.<sup>22</sup> Participation in the EU ETS is mandatory for companies in these sectors, in some sectors only plants above a certain size are included.

Both companies involved in Steel2Chemicals participate in ETS. The intention is to reuse and not to store CO and CO2 in a production process. CO emissions are currently being burned, together with blast furnace gas, in power stations where the CO is converted into CO2. The company ArcelorMittal receives free allowances in the framework of emissions trading equivalent to the difference in carbon content of the residual gases less the carbon content of natural gas (CUST 2019, p. 113). As described, the intention is to use the furnace gas mixture at Dow following the idea of carbon capture usage. In this case, ArcelorMittal still receives the free allowances up to the benchmark including the free allowances for the calculated additional carbon content of residual gases. However, Dow does not receive any free allowances.

According to the CUST report, the future project does not have any influence on the allocation of allowances in the EU ETS. However, Arcelor Mittal could hand over part of their free rights to Dow as part of an agreement. In this respect, the question is whether in the future the ETS systems in itself would also offer incentives for CCU projects. Or, the benefits could be shared voluntarily by bi-lateral agreements between industry partners.

#### The Waste Shipment Regulation (2006/1036/EC)

The Regulation (EC) No 1013/2006 of the European Parliament and of the Council of 14 June 2006 on shipments of waste lays down rules for controlling waste shipments in order to improve environmental protection. The European Union (EU) has a system to supervise and control shipments of waste within its borders and with the countries of the European Free Trade Association (EFTA), the Organisation for Economic Cooperation and Development (OECD) and non-EU countries that have signed the Basel Convention. It also incorporates the provisions of the Basel Convention and the revision of the OECD's

<sup>&</sup>lt;sup>21</sup> See the press report of the International Maritime Organization "Addressing barriers to transboundary carbon capture and storage" of 14 October 2019.

<sup>&</sup>lt;sup>22</sup> The numbers and estimates are taken from: R. Gerlagh & R. Heijmans: Climate-conscious consumers and the buy, bank, burn program, Nature Climate Change, June 2019. A summary of the research is also published by the University of Tilburg on https://phys.org/news/2019-07-carbon-emissions-threatens-climate.html.







2001 decision on the control of transboundary movements of wastes destined for recovery operations (i.e. where a waste is processed to recover a usable product or converted into a fuel) in EU law. It covers almost all types of waste, with the exception of radioactive waste, waste generated on board ships, shipments subject to the approval requirements of the animal by-product regulation, certain shipments of waste from the Antarctic, imports into the EU of certain waste generated by armed forces or relief organisations in situations of crisis, etc.

According to the assessment of the CUST report (2019) CO and CO2 that is used in accordance with CCU (capture and usage of CO2) is not considered under the WSD if the usage can be described in a consistent way. However, if CCS is applied (Carbon capture and storage), CO2 is regarded as waste. The holder of the waste must then apply for a WSR decision, unless the CO2 is collected for geological storage in accordance with the European CCS Directive.

In the case of the Steel2Chemicals project, the intention is that circular Naphtha is produced from CO and hydrogen. This product could - according to the CUST report (considering case law) - qualify both as waste or raw material and will have to be considered on a case-by-case basis. If Naphtha qualifies as waste, the company has to apply for a WSD (EVOA in Dutch) decision. This takes about 2 month. The decision can be requested from IL&T (Inspectie Leefomgeving en Transport) in the Netherlands. In Belgium this is done by OVAM (Openbare Vlaamse Afvalstoffenmaatschappij). If it can be proven that the operation has been carried out to produce circular naphtha, it could be considered to be raw material. In this case, an "End of waste certificate (NL-IL&T)"/"raw material certificate (B-OVAM)" must be requested. According to the CUST report analysis, in this case Naphtha is regarded as a new product and therefore subject to the REACH regulation<sup>24</sup>. This means that the new product has to be registered so that it can be approved in the EU. It is expected that this route will take more time than the WSD (EVOA) decision<sup>25</sup>.

#### Procedures: Permitting in the case of cross-border CO2 pipelines

In the Netherlands, the laying of pipelines must be normally regarded as the realisation of works within the meaning of the Wabo (Dutch legislation on spatial permit requirements). Relevant legislation in the area of works and structures combine the Spatial Planning Act (Wro) and the Wabo together with the associated generally binding regulations. With respect to projects under the CUST programme, the assumption is that pipelines fall under the Dutch External Safety of Pipelines Decree (Bevb.). Hence, they have to be tested against the development plan and may have the consequence that a revision of the development plan is required.<sup>26</sup>

https://ec.europa.eu/environment/chemicals/reach/reach\_en.htm

<sup>&</sup>lt;sup>23</sup> See Cust (2019), page 113.

<sup>&</sup>lt;sup>24</sup> The REACH Regulation (EC 1907/2006) aims to improve the protection of human health and the environment through the better and earlier identification of the intrinsic properties of chemical substances. This is done by the four processes of REACH, namely the registration, evaluation, authorisation and restriction of chemicals. REACH also aims to enhance innovation and competitiveness of the EU chemicals industry. See:

<sup>&</sup>lt;sup>25</sup> Ibid.







According to the CUST report the Bevb applies to:

- a. Pipes for natural gas having an external diameter of 50 mm or greater and a pressure of 1 600 kPa or greater;
- b. Flammable gas pipelines (such as Hydrogen) with an external diameter of 70 mm or more or an internal diameter of 50 mm or more and a pressure of 1 600 kPa or more;
- c. Toxic (acutely toxic) pipelines;
- d. Pipelines for specific substances (such as CO2 and nitrogen) with an external diameter of 70 mm or more or an internal diameter of 50 mm or more and a pressure of 1 600 kPa or more.

Hence, the expectation is that this is covering most of the CUST projects. If a pipeline falls under the Bevb, what is considered to be the normal route, the pipeline must be included in the development plan. Very often, there could be already a zoning for pipelines for the planned route. According to the authors of the CUST report, if the intention is dual use of an existing pipeline (e.g. a natural gas pipeline) for the transport of another substance, the development plan must still be revised. A flow-chart of the Dutch procedure is presented in Annex 6.2.

The Municipal Council is in principle the competent authority for the planning permission and the revision of the development plan, whereas the College of Mayor and Aldermen is responsible for the granting of the Wabo permit. Under the current Wro (spatial planning legislation) it is also possible that the province considers the pipelines in the CUST project to be of provincial importance. In this case, the Provincial Council will draw up a provincial integrated plan for this purpose. Within the framework of this integrated plan, the province would also be able to be the permitting authority (Gedeputeerde Staten).<sup>27</sup>

In Flanders, the procedure has to be analysed with a view on the competences of the Federal level and the Flemish government. The federal level deals with the transport of gas via pipelines and is subject to the transport permit. Accordingly, public easements can then be placed on private property by means of a declaration of public utility.

The Flemish section is land-based and focuses on the spatial planning and environmental aspects associated with the construction of pipeline infrastructure. The first question that arises here is whether the preferred route can be fitted into the current destinations according to the regional plan and/or municipal/provincial/regional RUP (ruimtelijk uitvoeringsplan/spatial implementation plan).

If the answer is positive, an application for an environmental permit can be submitted (including the project Environmental Impact Assessment). The assumption by the authors of the CUST project is that if the project is at a certain scale, a limited spatial impact will no longer be justifiable. In this case, a regional RUP will have to be drawn up for a new main transport pipeline.

This can be done according to the traditional track, where first the planning phase is completed and only after the provisional approval of this, the single permit can be granted.

An alternative is the all-in-one procedure for complex projects, in which both the planning phase and the authorisation procedure are merged into one separate trajectory<sup>28</sup>. The specific flow chart for the Belgian situation can be found in annex 6.1.

<sup>&</sup>lt;sup>27</sup> See Cust 2019, page 90.

<sup>&</sup>lt;sup>28</sup> See page 105.







## 3. Description of a Possible Solution

#### 3.1 Using the CUST roadmap as a compass

The CCU project "Steel2Chemicals" can be regarded as one element out of the broader infrastructure programme described by the CUST study. If the present small scale Steel2Chemicals pilot will lead to promising results, this will create the potential for a pipeline connection for synthetic light naphtha from ArcelorMittal to Dow Chemicals. The realisation of this 'peer-to-peer' connection has been included in the route study of the CUST project. The starting point for the connection is a volume of several tens of kilotons per year by 2030.<sup>29</sup>

This places Steel2Chemicals in a rather favourable position with respect to the involvement of stakeholders and the planning process. The preparatory work has been already done with the development of a roadmap. The following table (see table 4 below) shows the timeframe and the stakeholders involved.

In the first place, the challenge will be to establish a stable consortium with the input of the relevant stakeholders. This offers the possibility for the different interested bodies to join the consortium and plan in advance their particular engagement in the different phases of the project. It is obvious, that with respect to necessary planning and permitting procedures, the early involvement of different competent public authorities is crucial. This has been illustrated by the different procedures and processes described in Section 2. It demands the early involvement of municipalities (in particular in NL), the Provinces, the regional level (Flanders) and the national level. Meaning that in 2020, the partners of the consortium can start with a screening phase (verkenning) in order to have a better view on the different steps and their own commitments. In particular with respect to the planning of different compulsory assessment procedures (above all environmental Impact assessment), a longterm timetable for the procedures on both sides of the border is a very important element. Since the planning process is in the first place dependent on the efficiency of procedures at different levels, there is in both countries the question how to take into account recent experiences with respect to the planning of big infrastructure projects.

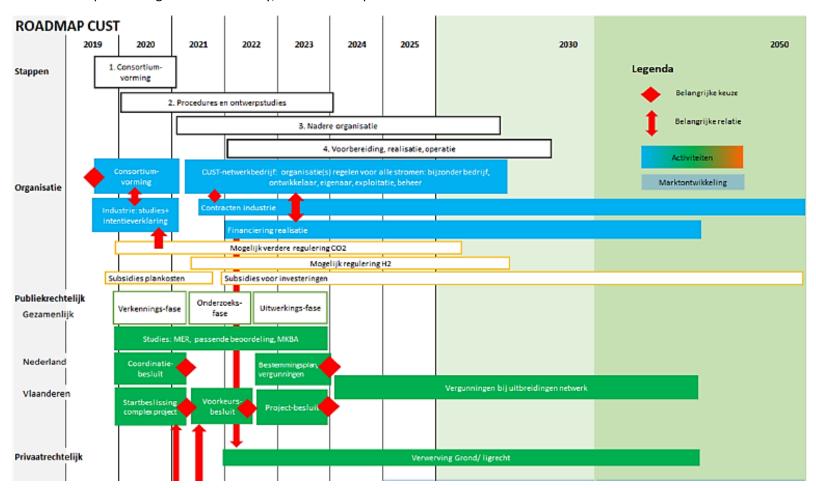
<sup>&</sup>lt;sup>29</sup> CUST, 2019, page 16.







Table 4: Roadmap according to the CUST study/non-technical part



Source: CUST 2019







### 3.2 Using the tool-box of the Benelux Union

#### The Declaration on integrated national energy and climate plans

On 11 June 2018, the Benelux energy ministers from the Netherlands, Belgium and Luxembourg signed a Benelux Declaration on regional cooperation on the development of integrated national energy and climate plans<sup>30</sup>. According to the Benelux, climate planning is a crucial governance element in order to deliver the EU's Paris climate goals.<sup>31</sup> One of the main objectives of the declaration is to join forces to achieve economies of scale and efficiency gains. In this sense the CUST projects (and Steel2Chemicals) can be certainly regarded as a crucial pillar of national climate plans, given the high potentials for CO2reduction. In the declaration, there is also mentioning of a working group on a technical level (ambtelijk, technische werkgroep) that is composed of members from the authorities that are responsible for climate and energy plans. It should be discussed whether the working group could also get a certain role with respect to the development of the CUST projects and its climate change dimension. In a first step, the working group could analyse the legal possibilities of the Benelux Unie with respect to the challenges of cross-border CO2 infrastructure as planned in the CUST context. Given the very relevant amount of CO2-reduction that could be realised with the application of CCU technology and other circular economy projects, climate and energy ministers could make CUST a political priority. This could mean that members of the technical working group could also be involved in the consortium in order to ensure, that CUST plays a prominent role at the political agenda of the national climate change ministries.

#### Using Benelux instruments for integrated cross-border planning

After lengthy official consultations between the Flemish and the Dutch governments, a "Guide for cross-border planning consultations between Flanders and the Netherlands" was approved on 30 May 2012.<sup>32</sup> The Guidance was produced as a tool to facilitate the mandatory cross-border planning consultation. The idea behind it is that a structurally organised consultation of new plans can ensure that everyone across the border gets access to the planning process and that cross-border awareness should lead to better plans. This is certainly relevant for any infrastructure planning under Steel2Chemicals and the other CUST projects. As shown in Section 2, there is most likely the necessity to make changes to development plans on both sides of the border. The transparent and early involvement of agencies and citizens is key to a successful planning process and can prevent delays and various problems in the course of the process up to the year 2025-2030. When the CUST implementing consortium will be established in 2020, the participants representing the competent authorities should debate whether the Benelux Guidance could be of particular interest for the process.

 $<sup>^{30}\,</sup>See: http://www.benelux.int/files/4515/2880/6221/Benelux\_Verklaring\_energie-klimaat.pdf$ 

<sup>&</sup>lt;sup>31</sup> See publication of the Benelux secretariat: "Hoogtepunten van de Benelux Samenwerking in 2018",

<sup>&</sup>lt;sup>32</sup> See: Benelux Commissie Vlaned: "Handreiking voor grensoverschrijdende planconsultaties van ruimtelijke plannen tussen Vlaanderne en Nederland", <a href="http://www.benelux.int/files/1313/9702/7485/Handreiking.pdf">http://www.benelux.int/files/1313/9702/7485/Handreiking.pdf</a>.







## 3.3 Needs-analysis organisation and governance: proposal for a governance INTERREG project

The CUST report has presented a first roadmap and is formulating an invitation for interested partners to join the consortium. Given the unique importance for the national climate policy of the Netherlands and Belgium, a successful implementation of the plans for the cross-border infrastructure is of utmost importance. The Dutch government sets more ambitious climate targets than those set by the European Union, and aims for a 49 per cent reduction in CO2 emissions by 2030. Under the plan, CCS should deliver at least 20 million tonnes in CO2 emissions reductions every year by 2030. This represents Europe's most ambitious plans on CCS to date.<sup>33</sup> Against this background, it seems important to conduct a more detailed need-analysis for the CUST project with respect to cross-border governance questions. The assumption is that the massive challenge for cross-border planning and policy making demands both innovative organisational solutions and perhaps (more fundamental) innovations in the cross-border governance system.

The intention of the CUST consortium, as presented in the report, is to bring together all relevant stakeholders from the private and public sectors. There could be in addition a special focus on the cooperation of competent authorities given the challenges of spatial planning, impact assessment and permitting. In this respect, one could consider a special "governance" project in the framework of the new INTERREG programme Flanders-The Netherlands. Aim of the INTERREG project could be to bring together the competent public sector bodies involved in the CUST consortium and develop innovative processes with respect to the necessary planning and permitting procedures deriving from the CUST project. This could be also in line with the intention of DG Regio, to improve the quality of cross-border cooperation in a structural sense and invest in cross-border "governance".

One of the questions could be, whether an innovative coordination body has to be established to steer the work of public sector bodies up to the year 2030. This could include the assessment whether the partners could make use of certain innovative recent instruments out of the legal toolbox of the Benelux. This includes the above-mentioned guidance on integrated planning and certainly new possibilities offered by the new Benelux Treaty on cross-border and inter-territorial cooperation of 2014. This refers for instance to the question whether the challenges of the CUST project could be better tackled by the establishment of a cross-border organisation in the form of a BGTS.<sup>34</sup>

In order to know better what the strength and weaknesses are of the cooperation today, one could conduct a swot analysis by using the following analytical table developed by Durand/Decoville who tried to classify shortcomings and difficulties in cross-border spatial planning.<sup>35</sup>

<sup>&</sup>lt;sup>33</sup> See for instance the calculations of the Norwegian NGO Bellona, <a href="https://bellona.org/news/ccs/2017-10-24057">https://bellona.org/news/ccs/2017-10-24057</a>.

<sup>&</sup>lt;sup>34</sup> A BGTS is the Benelux version of the EU EGTC, a grouping of territorial cooperation that is laid down in the Benelux Treaty on cross-border cooperation of 2014 (Benelux-Verdrag van 2014 inzake grensoverschrijdende en interterritoriale samenwerking), <a href="http://www.benelux.int/nl/samenwerking/grensoverschrijdende-samenwerking">http://www.benelux.int/nl/samenwerking/grensoverschrijdende-samenwerking</a>.

<sup>&</sup>lt;sup>35</sup> Durand, Frédéric andAntoine Decoville (2017): Establishing Cross-Border Spatial Planning. Chapter 12, in: Eduardo Medeiros (ed.), European Territorial Cooperation, The Urban Book Series, DOI.







Table 5: Types of obstacles in the production of cross-border spatial planning (Durand/Decoville)

Institutional obstacles	Different state organisations (centralism, federalism)  Lack of compatibility	Number of countries involved in the cooperation  Absence of a clear regulatory	Unbalanced representation of institutional levels and lack of coordination between them	Differentiated distribution of competencies according to administrative levels
Legal obstacles	between legal systems of territories	framework and of legal tools at cross-border scale	land use, planning rules or building permits	
Technical obstacles	Lack of coordinated / harmonized planning tools	Problems with the management of public spaces or cross-border services	Non-availability of specific funds for cross-border projects	Lack of connectivity of domestic systems / networks
Cultural obstacles	Linguistic differences generating communication problems and misunderstandings	Discrepancies between planning cultures	Divergences in working methods for collecting data or for designing planning	Divergences concerning the definition / use of conceptual planning tools
Political obstacles	Divergences of planning visions	Discrepancies with respect to political priorities of each territory	National priorities overweigh cross- border ones	
Fiscal obstacles	Differentials in the levels of taxation	Differences with regards to the existence of taxes		
Relational obstacles	Quality of interpersonal relations between	Divergences between the stakeholders in	Level of trust between implicated actors	Gap in interest and political involvement for
	individuals	terms of legitimacy, experience, and leadership	in cross-border governance	cross-border scale

Source: Durand/Decoville 2017







# 4. Pre-Assessment of whether the Case could be solved with the European Cross-Border Mechanism

As shown in the presented roadmap, building cross-border infrastructure for the transport of CO2 and other gases in the harbour of North Sea Port is a long-term infrastructure project. The time horizon is far beyond the year 2030. This is in accordance with the long-term challenges of the transition to a carbon free economy. It is evident, that the ambitious policy does also require innovation with respect to legal cross-border instruments.

The EU legislation in the field of Trans-European Networks (Regulation (EU) No 347/2013) identifies 12 strategic trans-European energy infrastructure priorities, which are essential to achieve the EU's energy and climate policy objectives. One key area is the development of carbon dioxide transport infrastructure between Member States and with neighbouring third countries in view of the deployment of carbon dioxide capture and storage. In this respect, the CUST project is in line with the strategic priorities of the EU.

One individual project with the involvement of Dutch and Belgian partners (and North Sea Port) did recently receive the status of a project of common interest. The project "CO2 TransPorts" aims to establish infrastructure to facilitate large-scale capture, transport and storage of CO2 from Rotterdam, Antwerp and the North Sea Port. Article 6 of Regulation (EU) No 347/2013 describes an interesting instrument for projects of common interest (PCI). Where a project encounters significant implementation difficulties, the Commission may designate, in agreement with the Member States concerned, a European coordinator for a certain period. According to the regulation, the coordinator role is to promote the projects, for which he has been designated European coordinator and the cross-border dialogue between the project promoters and all concerned stakeholders and assist all parties as necessary in consulting concerned stakeholders and obtaining necessary permits for the projects. It shows that European legislation in this respect also provides instruments for cross-border coordination challenges.

Steel2Chemicals and the overall CUST project are not a PCI, but there is certainly – as shown above – the need for strong coordination and assistance with respect to obtaining the necessary permits in the case of cross-border pipeline infrastructure.

Concerning appropriate coordination and cross-border governance structure, the question of a specially designated "permitting" coordinator could also arise for the CUST project. It is clear that in the first place, this would not mean that there are any changes made to the competences or procedures of national permitting authorities. The same is true, if the public sector bodies from Belgium and the Netherlands established a special coordination organisation for the CUST project, for instance based on the EGTC regulation or the already presented Benelux BGTS. This would not change the national competences or procedures.

So, what could the proposed instrument "European Cross-border mechanism" mean for the cooperation in the case of the CUST project?<sup>37</sup>

The hypothetical application of the ECBM could be interesting if in the course of the bi-lateral coordination of different planning procedures, impact assessments or permitting procedures, questions would arise related to different technical standards. If there were differences with respect to the technical provisions of pipelines (for instance safety requirements or provisions with respect to distances to housing areas), the initiator of the pipeline project could ask the Member State in question whether the Member State would accept with respect to a clearly defined territory the standard of the neighbouring country. Or, the initiator could ask whether the acceptance of a standard on both sides

<sup>&</sup>lt;sup>36</sup> See: Amending Regulation (EU) No 347/2013 of the European Parliament and of the Council as regards the Union list of projects of common interest, {SWD(2019) 395 final}.

<sup>&</sup>lt;sup>37</sup> The analysis of the ECBM refers to the initial proposal of the European Commission, COM(2018)373.







of the border was possible with respect to one specific pipeline. The acceptance of the standard could be laid down on the basis of the ECBM regulation. If it was done in the form of a "commitment", it would allow the "committing" Member creating a derogation from national law on a very specific and limited item. This type of acceptance of standards of the neighbouring country is already possible under certain legal provisions of the Benelux. Hence, it would be not new to the cross-border situation between the Netherlands and Belgium. So far, the acceptance of technical standards as for instance the technical equipment of ambulances has to be based on specific Benelux framework legislation.

According to the proposed ECBM regulation the second option, *a statement*, would involve a legislative procedure in the Member State, to formally amend the national rules to allow for a derogation.

An interesting question is certainly, whether the ECBM offers opportunities with respect to procedural aspects as for instance in the case of "environmental impact assessment". Would it be possible that in the course of the permitting procedure for a pipeline, one of the authorities dealing with impact assessment is looking into the impacts on the entire cross-border territory? If that was possible, the authority of one Member State could accept the results of an EIA from another Member State for a clearly defined limited cross-border situation. This derogation from normal practice could be probably also laid down on the basis of the proposed ECBM.

The ECBM could thus be potentially an interesting extra tool with respect to the different challenges of the CUST project. However, there are of course also other possibilities for Belgium and the Netherlands if the cross-border planning in the case of CO2-infrastructure would be confronted with too many obstacles. It would be of course also feasible to develop a specific legal instrument (beschikking) under the Benelux treaty in order to solve problems or ease the processes.

5. Other relevant aspects to this case

none

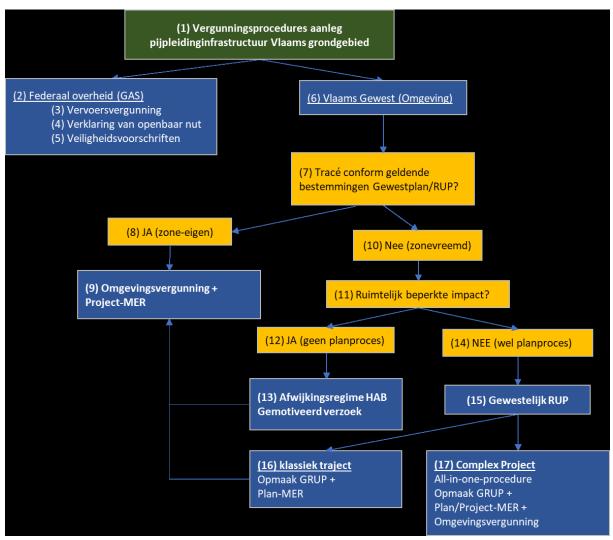






## 6. References and Appendix/Appendices if any

6.1 Annex: the permitting process in the case of pipeline-infrastructure in Flanders



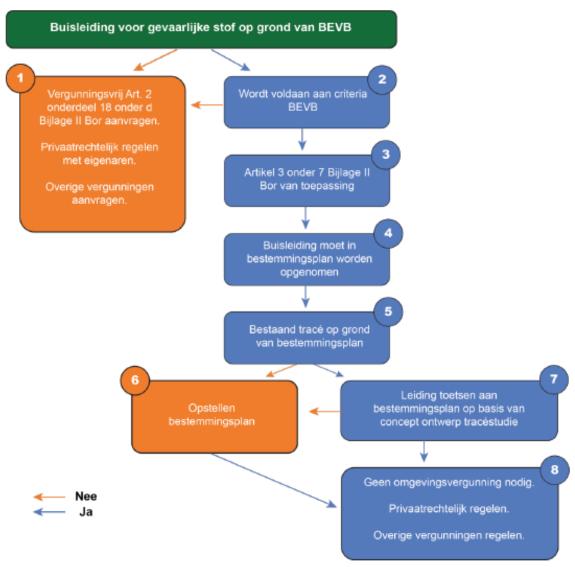
Source: Cust 2019







## 6.2 Annex: the permitting process in the case of pipeline-infrastructure in the Netherlands



Figuur 5-4 Stroomschema hantering wetgeving voor CUST (Nederland)

Source: CUST 2019

Maastricht, 26 November Date and signature Martin Unfried