International Association of Oil & Gas Producers

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## ANNEX 1: Recommendations on the role of CCS in draft NECPs

| Country | Recommendation |
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| **Belgium** | Belgium could highlight current CCS developments and policies in support of CCS deployment in the Belgian NECP:<br><br>• The Flemish government has approved a long-term plan to allocate €400m over the next 20 years on $CO_2$ management, including CCS and CCU technologies[1].<br><br>• In the Port of Antwerp, a feasibility study of solutions for capturing $CO_2$ from industry in the port, transporting it by pipeline or ship for utilisation or storage is ongoing[2].<br><br>• LEILAC[3] is an ongoing Horizon 2020 supported CCS pilot project, aimed at enabling cement and lime industries to reduce $CO_2$ emissions dramatically.<br><br>• Carbon2Value[4] is a new pilot installation that will separate $CO_2$ from the gases resulting from steel production and concentrate it for storage or utilisation.<br><br>• As a SET-Plan TWG9 CCS and CCU country, Belgium has committed[5] to deliver on 8 key CCS and CCU research and innovation activities required to achieve 2020 targets agreed by the European Commission and to identify actions required to meet the key performance indicators set for 2030. |
| **Croatia** | Croatia could further assess national opportunities for CCS and low-carbon hydrogen from natural gas with CCS in the Croatian NECP:<br><br>• Croatia plans to elaborate a national action plan for preparatory activities for CCS projects[6]. As a natural gas producing Member State with geological and gas technology experience, Croatia should consider the production and use of low-carbon hydrogen from natural gas with CCS among national decarbonisation options. |
| **Denmark** | Denmark could highlight current CCS developments and policies in support of CCS deployment in the Danish NECP: |

[1] Brussels Times (2019). Article available from: http://brusselstimes.com/business/technology/14629/flanders-to-spend-400-million-euros-on-co-package
[2] Port of Antwerp project information available from: https://www.portofantwerp.com/en/news/energy-transition-port-antwerp-and-fluxys-team-co2-capture
[3] LEILAC project information available from: https://www.project-leilac.eu/
[4] Carbon2Value project information available from: https://en.northseaport.com/innovative-partnership-arcelormittal-and-dow-for-co2-reduction-in-north-sea-port
[5] SET-Plan Declaration of Intent available from: https://setis.ec.europa.eu/system/files/integrated_set-plan/setplan_doi_ccus-final.pdf
[6] Croatian draft NECP available from: https://ec.europa.eu/energy/sites/ener/files/documents/croatia_draftnecp_en.pdf

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| | • The Danish Energy Agreement earmarks 240m DKK annually over a 20-year period to expand the use of biogas and other green gases[7]. As a natural gas producing Member State with geological and gas technology experience, Denmark should consider the production and use of low-carbon hydrogen from natural gas with CCS among decarbonisation options.<br><br>• In 2018, the Danish government set aside 100m DKK for $CO_2$ storage research[8]. The Geological Survey of Denmark and Greenland (GEUS) contends that the Danish underground can store the equivalent of 500 years of Danish $CO_2$ emissions.<br><br>• Denmark as part of the Nordic Council of Ministers has declared[9] to catalyse the scaling up of Nordic sustainable solutions by, inter alia, contributing to further development and deployment of CCS, CCU and BECCS technologies. |
| **Finland** | Finland could highlight current CCS developments policies in support of CCS in the Finnish NECP:<br><br>• The Finnish draft NECP[10] highlights the flagship Nordic research project Negative $CO_2$, which can be clarified as a project aimed to enable negative $CO_2$ emissions through BECCS[11].<br><br>• Finland as part of the Nordic Council of Ministers has declared[12] to catalyse the scaling up of Nordic sustainable solutions by, inter alia, contributing to further development and deployment of CCS, CCU and BECCS technologies.<br><br>• As a SET-Plan TWG9 CCS and CCU member, Finland has committed[13] to deliver on 8 key CCS and CCU research and innovation activities required to achieve 2020 targets agreed by the European Commission and to identify actions required to meet the key performance indicators set for 2030. |
| **France** | France should consider policies in support of CCS deployment and/or cross-border cooperation on $CO_2$ storage in the French NECP in order to meet its ambitions: |

[7] Danish Energy Agreement (2018) available from: https://en.efkm.dk/media/12307/energy-agreement-2018.pdf
[8] CPH Post (2019). Article available from: http://cphpost.dk/news/denmarks-dirt-could-hold-key-to-climate-change-solution.html
[9] Nordic Council of Ministers (2019). Declaration on Nordic Carbon Neutrality. Available from: https://valtioneuvosto.fi/documents/10616/1457318/Declaration+on+Nordic+climate+neurtality.pdf/807e0601-0001-e209-00a9-f3fe5ab14a07
[10] Finnish draft NECP available from: https://ec.europa.eu/energy/sites/ener/files/documents/finland_draftnecp.pdf
[11] Negative CO2 project information available from: https://www.nordicenergy.org/flagship/negative-co2/about-negative-co2/
[12] Nordic Council of Ministers (2019). Declaration on Nordic Carbon Neutrality. Available from: https://valtioneuvosto.fi/documents/10616/1457318/Declaration+on+Nordic+climate+neurtality.pdf/807e0601-0001-e209-00a9-f3fe5ab14a07
[13] SET-Plan Declaration of Intent available from: https://setis.ec.europa.eu/system/files/integrated_set-plan/setplan_doi_ccus-final.pdf

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| | • France recognises the necessity of CCS to achieve climate neutrality in the French draft NECP,[14] and has experience with CCS technology through the Lacq[15] CCS demonstration site.<br><br>• As a SET-Plan TWG9 CCS and CCU country, France has committed[16] to deliver on 8 key CCS and CCU research and innovation activities required to achieve 2020 targets agreed by the European Commission and to identify actions required to meet the key performance indicators set for 2030. |
| **Germany** | Germany should consider policies in support of CCS deployment and/or cross-border cooperation on $CO_2$ storage in the German NECP in order to broaden decarbonisation options and meet its ambitions:<br><br>• German Chancellor Angela Merkel has reiterated her aim for Germany to achieve carbon neutrality by 2050, and that this can only be done if Germany is willing to capture and store $CO_2$[17].<br><br>• As a SET-Plan TWG9 CCS and CCU country, Germany has committed[18] to deliver on 8 key CCS and CCU research and innovation activities required to achieve 2020 targets agreed by the European Commission and to identify actions required to meet the key performance indicators set for 2030. |
| **Italy** | Italy should consider policies in support of CCS deployment and/or cross-border cooperation on $CO_2$ storage in the Italian NECP in order to meet its ambitions:<br><br>• Italy highlights the potential use of low-carbon hydrogen from natural gas in the Italian draft NECP[19]. Considering CCS is an essential component to its production, Italy should consider policies in support of CCS deployment and/or cross-border cooperation on $CO_2$ storage in the Italian NECP in order to meet ambitions in the area.<br><br>• As a SET-Plan TWG9 CCS and CCU country, Italy has committed[20] to deliver on 8 key CCS and CCU research and innovation activities required to achieve 2020 targets agreed by the European Commission and to identify actions required to meet the key performance indicators set for 2030. |

[14] French draft NECP available from: https://ec.europa.eu/energy/sites/ener/files/documents/france_draftnecp.pdf
[15] Lacq project information available from: http://www.zeroco2.no/projects/total2019s-project-in-lacq
[16] SET-Plan Declaration of Intent available from: https://setis.ec.europa.eu/system/files/integrated_set-plan/setplan_doi_ccus-final.pdf
[17] Article available from The Guardian: https://www.theguardian.com/world/2019/may/15/angela-merkel-interview-europe-eu-unite-challenge-us-russia-china
[18] SET-Plan Declaration of Intent available from: https://setis.ec.europa.eu/system/files/integrated_set-plan/setplan_doi_ccus-final.pdf
[19] Italian draft NECP available from: https://ec.europa.eu/energy/sites/ener/files/documents/ec_courtesy_translation_it_necp.pdf
[20] SET-Plan Declaration of Intent available from: https://setis.ec.europa.eu/system/files/integrated_set-plan/setplan_doi_ccus-final.pdf

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| **Romania** | Romania could further assess national opportunities for CCS and low-carbon hydrogen from natural gas with CCS in the Romanian NECP:<br>• As a natural gas producing Member State with geological and gas technology experience, Romania should consider the production and use of low-carbon hydrogen from natural gas with CCS among decarbonisation options.<br>• As a SET-Plan TWG9 CCS and CCU country, Romania has committed[21] to deliver on 8 key CCS and CCU research and innovation activities required to achieve 2020 targets agreed by the European Commission and to identify actions required to meet the key performance indicators set for 2030. |
| **Slovakia** | Slovakia should consider policies in support of CCS deployment and/or cross-border cooperation on $CO_2$ storage in the Slovakian NECP in order to meet its ambitions:<br>• Slovakia highlights the potential use of low-carbon hydrogen from natural gas in the Slovakian draft NECP[22]. Considering CCS is an essential component to its production, Slovakia should consider policies in support of CCS deployment and/or cross-border cooperation on $CO_2$ storage in the Slovakian NECP in order to meet ambitions in the area. |
| **Spain** | Spain could highlight current CCS developments and further assess national opportunities for CCS in the Spanish NECP:<br>• As a SET-Plan TWG9 CCS and CCU country, Spain has committed[23] to deliver on 8 key CCS and CCU research and innovation activities required to achieve 2020 targets agreed by the European Commission and to identify actions required to meet the key performance indicators set for 2030. |
| **Sweden** | Sweden could highlight current CCS developments, cross-border cooperation on $CO_2$ storage and policies in support of CCS deployment in the Swedish NECP:<br>• In 2019, the Swedish government allocated 100m SEK to pilot projects aimed at accelerating the deployment of CCS and BECCS[24].<br>• The ongoing Preem CCS project[25] aims to build a full-scale CCS facility at a Swedish refinery by 2025, reducing emissions $CO_2$ emissions from the refinery by one third. A bilateral agreement between Sweden and Norway |

[21] SET-Plan Declaration of Intent available from: https://setis.ec.europa.eu/system/files/integrated_set-plan/setplan_doi_ccus-final.pdf
[22] Slovakian draft NECP available from: https://ec.europa.eu/energy/sites/ener/files/documents/ec_courtesy_translation_sk_necp.pdf
[23] SET-Plan Declaration of Intent available from: https://setis.ec.europa.eu/system/files/integrated_set-plan/setplan_doi_ccus-final.pdf
[24] Article available from Dagens industri: https://www.di.se/hallbart-naringsliv/100-miljoner-till-ccs-i-varandringsbudgeten/
[25] Preem CCS project information available from: https://news.cision.com/preem-ab/r/full-scale-ccs-plant-reduces-co2-emissions-by-one-third,c2663877

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| | will allow for the cross-border transport of $CO_2$ to an offshore storage location. The project is supported by the Swedish Energy Agency through its Industrial Leap strategy[26] in support of breakthrough technologies mitigating process-related industrial emissions.<br><br>• Sweden as part of the Nordic Council of Ministers has declared[27] to catalyse the scaling up of Nordic sustainable solutions by, inter alia, contributing to further development and deployment of CCS, CCU and BECCS technologies. |
| **Additional notes** | • Member States with potential for $CO_2$ storage or cross-border $CO_2$ transport which do not currently take CCS into consideration in their NECPs could be encouraged to assess national potential for CCS in order to broaden decarbonisation options in support of EU climate objectives.<br><br>• Member States could be encouraged to develop $CO_2$ storage atlases of suitable storage complexes as well as promote relevant geological and infrastructure information sharing to help determine $CO_2$ storage capacity and therby increase CCS potential in Europe.<br><br>• Member States with mature and developing gas hubs located across Europe could be encouraged to further assess potential for low-carbon hydrogen and the transport of $CO_2$ for storage purposes. |

[26] Information on the Industrual Leap strategy available from: http://www.energimyndigheten.se/forskning-och-innovation/forskning/industri/industriklivet/

[27] Nordic Council of Ministers (2019). Declaration on Nordic Carbon Neutrality. Available from: https://valtioneuvosto.fi/documents/10616/1457318/Declaration+on+Nordic+climate+neurtality.pdf/807e0601-0001-e209-00a9-f3fe5ab14a07