

Brussels, 24 May 2019

Topic: Draft National Energy & Climate Plans and Carbon Capture & Storage

Dear Mr Cañete,
Dear Mr Šefčovič,

The ongoing review of the draft National Energy and Climate Plans (NECPs) offers an excellent opportunity to outline readily available solutions to reduce EU emissions **now** and to further recognise and facilitate the deployment of Carbon Capture and Storage (CCS) and low-carbon hydrogen.

The oil and gas industry welcomed the Paris Agreement as an important global step in addressing climate change and its challenges. Our industry can contribute to the dual objective of reducing greenhouse gas emissions while providing affordable energy to European households and businesses.

To meet this dual challenge, the European Commission can encourage Member States to **recognise natural gas** as an affordable and efficient energy source which can contribute to lowering CO₂ emissions while keeping transition costs in check, by considering in their NECPs:

- Wherever possible, a coal-to-gas switch in power generation, which would halve CO₂ emissions and virtually eliminate air pollutants. Coal accounts for around 70% of the EU power sector's emissions. Gas-fired power plants can provide the necessary support for rolling out renewables in the EU, ensuring flexible back up and increasing the resilience of the European grid. Additionally, natural gas CHP can significantly lower the carbon footprint of energy and heat, while helping to keep transition costs in check.
- The smart use of gas infrastructure, which can provide the EU with necessary and affordable energy storage capacity, and in the future also store and transport CO₂ for storage purposes or low-carbon hydrogen.
- Low-carbon liquid fuels, hydrogen, LNG and natural gas in road and maritime transport. Using LNG as a marine transport fuel complies already today with the IMO's 2020 regulations and puts us on the right track to meet its 2050 objectives by reducing SOx and PM emissions by close to 100%¹, NOx by 80-90% and CO₂ emissions by up to 21%².
- High-value petrochemicals for insulation and lubricants.

Deploying CCS as a large-scale solution is considered integral to reaching climate neutrality, as acknowledged by the IEA, in the IPCC 1.5°C Special Report and in the European Commission's long-term strategic vision for a climate neutral economy. In the EU, IOGP was tasked by the Madrid Forum to coordinate a report on the potential of CCS and CCU in Europe in cooperation with other stakeholders, published in May 2019³. To turn these signals into action, IOGP calls on willing Member States to highlight the role of CCS in their NECPs.

¹ UMAS (2018). LNG as a marine fuel in the EU. Available from: <https://u-mas.co.uk/LinkClick.aspx?fileticket=vVGOF-ct68s%3D&portalid=0>

² Jingjing Xu, David Testa & Proshanto K. Mukherjee (2015) The Use of LNG as a Marine Fuel: The International Regulatory Framework, Ocean Development & International Law, 46:3, 225-240, DOI: 10.1080/00908320.2015.1054744; 'Life Cycle GHG Emission Study on the Use of LNG as Marine Fuel' <https://info.thinkstep.com/lng-ghg-study>

³ IOGP (2019). The Potential for CCS and CCU in Europe. Available from: https://ec.europa.eu/info/sites/info/files/iogp_-_report_-_ccs_ccu.pdf

In doing so, we can:

- Contribute to lowering emissions from EU industrial production through applying CCS.
- Deliver flexible low-carbon gas-fired power with CCS to a decarbonised energy system with a high share of variable renewables.
- Enable the large-scale production of low-carbon hydrogen by reforming natural gas to hydrogen with CCS or through methane pyrolysis to deliver clean energy for industry, power, transport and heating.
- Remove CO₂ from the atmosphere by combining CCS with bioenergy (BECCS).

IOGP welcomes the recognition of CCS in several NECPs. However, Member States could better reflect the full range of current CCS projects, funding mechanisms and supportive policies at national level. For example:

- Not all Member States participating in the EU Strategic Energy Technology Plan Technical Working Group 9 (SET-Plan TWG9) on CCS and CCU have referred to their research and innovation commitments in their NECPs.
- Other Member States with potential for CO₂ storage or cross-border CO₂ transport do not currently take CCS into consideration in their NECPs. The European Commission could encourage them to assess national potential in order to broaden decarbonisation options in support of EU climate objectives.

In the attached ANNEX 1, we have identified CCS projects, funding mechanisms and supportive policies which exist in Member States and which could be included in their NECPs.

With these recommendations, NECPs could be supplemented to take stock of recent developments and highlight the increasingly important role CCS has in delivering on EU energy and climate objectives.

We hope you and your colleagues consider these points while finalising recommendations to Member States.

Should you have questions please do not hesitate to contact us.

Yours sincerely,

 IOGP

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

Country	Recommendation
Belgium	<p>Belgium could highlight current CCS developments and policies in support of CCS deployment in the Belgian NECP:</p> <ul style="list-style-type: none"> The Flemish government has approved a long-term plan to allocate €400m over the next 20 years on CO₂ management, including CCS and CCU technologies⁴. In the Port of Antwerp, a feasibility study of solutions for capturing CO₂ from industry in the port, transporting it by pipeline or ship for utilisation or storage is ongoing⁵. LEILAC⁶ is an ongoing Horizon 2020 supported CCS pilot project, aimed at enabling cement and lime industries to reduce CO₂ emissions dramatically. Carbon2Value⁷ is a new pilot installation that will separate CO₂ from the gases resulting from steel production and concentrate it for storage or utilisation. As a SET-Plan TWG9 CCS and CCU country, Belgium has committed⁸ 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	<p>Croatia could further assess national opportunities for CCS and low-carbon hydrogen from natural gas with CCS in the Croatian NECP:</p> <ul style="list-style-type: none"> Croatia plans to elaborate a national action plan for preparatory activities for CCS projects⁹. 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	<p>Denmark could highlight current CCS developments and policies in support of CCS deployment in the Danish NECP:</p>

⁴ Brussels Times (2019). Article available from: <http://brusselstimes.com/business/technology/14629/flanders-to-spend-400-million-euros-on-co-package>

⁵ Port of Antwerp project information available from: <https://www.portofantwerp.com/en/news/energy-transition-port-antwerp-and-fluxys-team-co2-capture>

⁶ LEILAC project information available from: <https://www.project-leilac.eu/>

⁷ Carbon2Value project information available from: <https://en.northseaport.com/innovative-partnership-arcelormittal-and-dow-for-co2-reduction-in-north-sea-port>

⁸ SET-Plan Declaration of Intent available from: https://setis.ec.europa.eu/system/files/integrated_set-plan/setplan_doi_ccus-final.pdf

⁹ Croatian draft NECP available from: https://ec.europa.eu/energy/sites/ener/files/documents/croatia_draftnecp_en.pdf

	<ul style="list-style-type: none"> The Danish Energy Agreement earmarks 240m DKK annually over a 20-year period to expand the use of biogas and other green gases¹⁰. 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. In 2018, the Danish government set aside 100m DKK for CO₂ storage research¹¹. The Geological Survey of Denmark and Greenland (GEUS) contends that the Danish underground can store the equivalent of 500 years of Danish CO₂ emissions. Denmark as part of the Nordic Council of Ministers has declared¹² 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	<p>Finland could highlight current CCS developments policies in support of CCS in the Finnish NECP:</p> <ul style="list-style-type: none"> The Finnish draft NECP¹³ highlights the flagship Nordic research project Negative CO₂, which can be clarified as a project aimed to enable negative CO₂ emissions through BECCS¹⁴. Finland as part of the Nordic Council of Ministers has declared¹⁵ to catalyse the scaling up of Nordic sustainable solutions by, inter alia, contributing to further development and deployment of CCS, CCU and BECCS technologies. As a SET-Plan TWG9 CCS and CCU member, Finland has committed¹⁶ 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	<p>France should consider policies in support of CCS deployment and/or cross-border cooperation on CO₂ storage in the French NECP in order to meet its ambitions:</p>

¹⁰ Danish Energy Agreement (2018) available from: <https://en.efkm.dk/media/12307/energy-agreement-2018.pdf>

¹¹ CPH Post (2019). Article available from: <http://cphpost.dk/news/denmarks-dirt-could-hold-key-to-climate-change-solution.html>

¹² Nordic Council of Ministers (2019). Declaration on Nordic Carbon Neutrality. Available from: <https://valtioneuvosto.fi/documents/10616/1457318/Declaration+on+Nordic+climate+neutrality.pdf/807e0601-0001-e209-00a9-f3fe5ab14a07>

¹³ Finnish draft NECP available from: https://ec.europa.eu/energy/sites/ener/files/documents/finland_draftnecp.pdf

¹⁴ Negative CO₂ project information available from: <https://www.nordicenergy.org/flagship/negative-co2/about-negative-co2/>

¹⁵ Nordic Council of Ministers (2019). Declaration on Nordic Carbon Neutrality. Available from: <https://valtioneuvosto.fi/documents/10616/1457318/Declaration+on+Nordic+climate+neutrality.pdf/807e0601-0001-e209-00a9-f3fe5ab14a07>

¹⁶ SET-Plan Declaration of Intent available from: https://setis.ec.europa.eu/system/files/integrated_set-plan/setplan_doi_ccus-final.pdf

	<ul style="list-style-type: none"> France recognises the necessity of CCS to achieve climate neutrality in the French draft NECP,¹⁷ and has experience with CCS technology through the Lacq¹⁸ CCS demonstration site. As a SET-Plan TWG9 CCS and CCU country, France has committed¹⁹ 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	<p>Germany should consider policies in support of CCS deployment and/or cross-border cooperation on CO₂ storage in the German NECP in order to broaden decarbonisation options and meet its ambitions:</p> <ul style="list-style-type: none"> 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 CO₂²⁰. As a SET-Plan TWG9 CCS and CCU country, Germany has committed²¹ 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	<p>Italy should consider policies in support of CCS deployment and/or cross-border cooperation on CO₂ storage in the Italian NECP in order to meet its ambitions:</p> <ul style="list-style-type: none"> Italy highlights the potential use of low-carbon hydrogen from natural gas in the Italian draft NECP²². Considering CCS is an essential component to its production, Italy should consider policies in support of CCS deployment and/or cross-border cooperation on CO₂ storage in the Italian NECP in order to meet ambitions in the area. As a SET-Plan TWG9 CCS and CCU country, Italy has committed²³ 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.

¹⁷ French draft NECP available from: https://ec.europa.eu/energy/sites/ener/files/documents/france_draftnecp.pdf

¹⁸ Lacq project information available from: <http://www.zeroco2.no/projects/total2019s-project-in-lacq>

¹⁹ SET-Plan Declaration of Intent available from: https://setis.ec.europa.eu/system/files/integrated_set-plan/setplan_doi_ccus-final.pdf

²⁰ Article available from The Guardian: <https://www.theguardian.com/world/2019/may/15/angela-merkel-interview-europe-eu-unite-challenge-us-russia-china>

²¹ SET-Plan Declaration of Intent available from: https://setis.ec.europa.eu/system/files/integrated_set-plan/setplan_doi_ccus-final.pdf

²² Italian draft NECP available from: https://ec.europa.eu/energy/sites/ener/files/documents/ec_courtesy_translation_it_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

Romania	<p>Romania could further assess national opportunities for CCS and low-carbon hydrogen from natural gas with CCS in the Romanian NECP:</p> <ul style="list-style-type: none"> 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. As a SET-Plan TWG9 CCS and CCU country, Romania has committed²⁴ 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	<p>Slovakia should consider policies in support of CCS deployment and/or cross-border cooperation on CO₂ storage in the Slovakian NECP in order to meet its ambitions:</p> <ul style="list-style-type: none"> Slovakia highlights the potential use of low-carbon hydrogen from natural gas in the Slovakian draft NECP²⁵. Considering CCS is an essential component to its production, Slovakia should consider policies in support of CCS deployment and/or cross-border cooperation on CO₂ storage in the Slovakian NECP in order to meet ambitions in the area.
Spain	<p>Spain could highlight current CCS developments and further assess national opportunities for CCS in the Spanish NECP:</p> <ul style="list-style-type: none"> As a SET-Plan TWG9 CCS and CCU country, Spain has committed²⁶ 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	<p>Sweden could highlight current CCS developments, cross-border cooperation on CO₂ storage and policies in support of CCS deployment in the Swedish NECP:</p> <ul style="list-style-type: none"> In 2019, the Swedish government allocated 100m SEK to pilot projects aimed at accelerating the deployment of CCS and BECCS²⁷. The ongoing Preem CCS project²⁸ aims to build a full-scale CCS facility at a Swedish refinery by 2025, reducing emissions CO₂ emissions from the refinery by one third. A bilateral agreement between Sweden and Norway

²⁴ SET-Plan Declaration of Intent available from: https://setis.ec.europa.eu/system/files/integrated_set-plan/setplan_doi_ccus-final.pdf

²⁵ Slovakian draft NECP available from: https://ec.europa.eu/energy/sites/ener/files/documents/ec_courtesy_translation_sk_necp.pdf

²⁶ SET-Plan Declaration of Intent available from: https://setis.ec.europa.eu/system/files/integrated_set-plan/setplan_doi_ccus-final.pdf

²⁷ Article available from Dagens industri: <https://www.di.se/hallbart-naringsliv/100-miljoner-till-ccs-i-varandringsbudgeten/>

²⁸ Preem CCS project information available from: <https://news.cision.com/preem-ab/r/full-scale-ccs-plant-reduces-co2-emissions-by-one-third,c2663877>

	<p>will allow for the cross-border transport of CO₂ to an offshore storage location. The project is supported by the Swedish Energy Agency through its Industrial Leap strategy²⁹ in support of breakthrough technologies mitigating process-related industrial emissions.</p> <ul style="list-style-type: none"> Sweden as part of the Nordic Council of Ministers has declared³⁰ 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	<ul style="list-style-type: none"> Member States with potential for CO₂ storage or cross-border CO₂ 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. Member States could be encouraged to develop CO₂ storage atlases of suitable storage complexes as well as promote relevant geological and infrastructure information sharing to help determine CO₂ storage capacity and thereby increase CCS potential in Europe. 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 CO₂ for storage purposes.

²⁹ Information on the Industrial Leap strategy available from: <http://www.energimyndigheten.se/forskning-och-innovation/forskning/industri/industriklivet/>

³⁰ Nordic Council of Ministers (2019). Declaration on Nordic Carbon Neutrality. Available from: <https://valtioneuvosto.fi/documents/10616/1457318/Declaration+on+Nordic+climate+neutrality.pdf/807e0601-0001-e209-00a9-f3fe5ab14a07>