ACER
Agency for the Cooperation of Energy Regulators

PCI Monitoring Outcomes:

Strengths and Weaknesses

THE FUTURE OF GAS IN EUROPE

7 March 2019

European Parliament, Brussels

The views expressed in this presentation are those of the presenter and not necessarily of the Agency, any of its Boards, or any NRA.

In this presentation

- **Highlights on the most recent rounds of PCI monitoring:**
  - **Improvements**
  - **Things to do**
- **PCI progress:**
  - **Advancement**
  - **Costs**
  - **Benefits**
  - **Commissioning**
  - **Rescheduling, delays**
  - **Continuity**
- **Dealing with future challenges:**
  - **The short run**
  - **The long run**

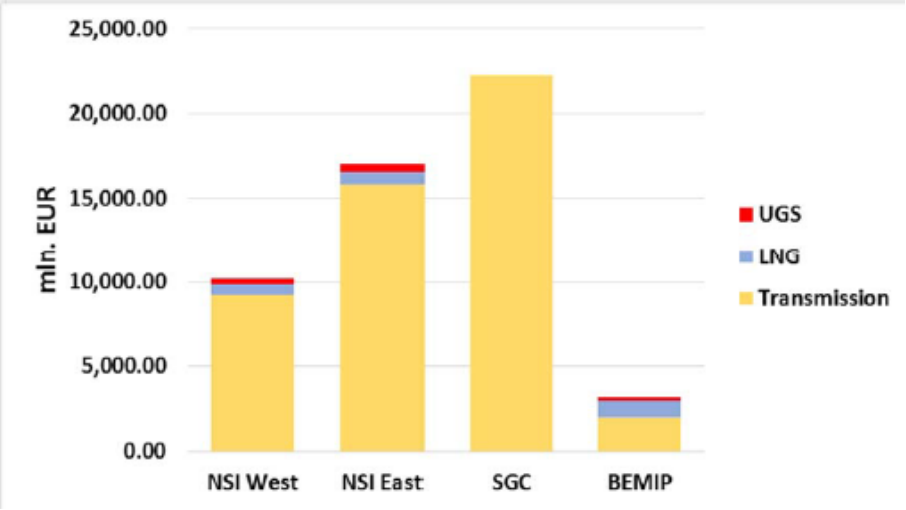
Needs, gaps, assessment tools

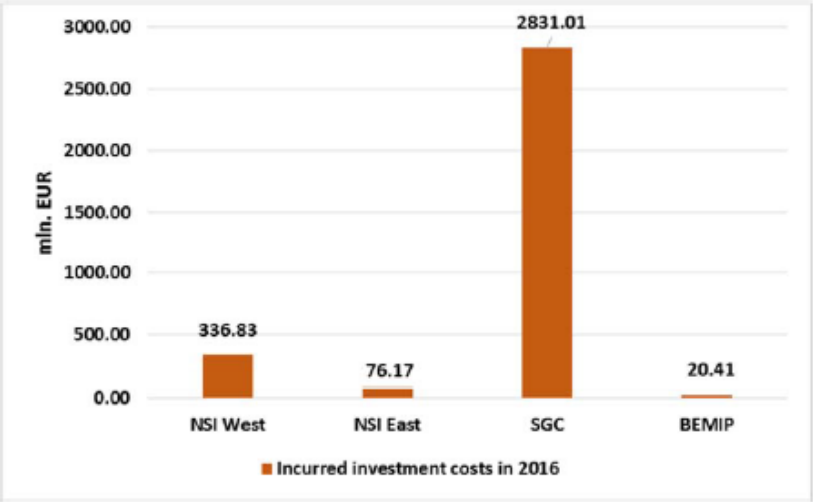
- **Link infrastructure needs to the assessed features of the projects:**
  - **Infrastructure gap exists?**
  - **PCI numbers are down – more critical approach adopted in selection**
- **Focus on needs / benefits!**
- **CBA:**
  - **PS-CBA should be available as an output of the TYNDP**
  - **Update of the PCI assessment methodology should start as soon as the format of the output of the TYNDP 2018 is developed (underway!)**
  - ***The most pressing deficiency in 2017 was the CBA methodology: limited availability of benefit and cost data, esp. in monetary terms in the TYNDP***
  - **The updated CBA methodology to be communicated by ENTSOG to the European Commission before the process starts (done!)**

Source: This slide is based on the Agency's Opinion on the Draft 2017 Gas PCI List, http://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Opinions/Opinions/ACER%20Opinion%2013-2017.pdf

PCI Monitoring Results 2017

- **Transmission dominates planned investments… <u>only in 2 cases would bring gas by pipeline from new sources</u>**
- **About €6 billion invested since 2013 (€3.2 billion in 2016 alone) - investment bulk went into just 2 PCIs in SGC**
- **21 PCIs filed *<u>investment requests incl. CBCA</u>*, 13 intend to apply**
- **8 applied for *<u>specific incentives</u>*, 35 not decided yet, 42 do not plan to apply**
- **4 applied for *<u>exemptions</u>*, 15 not decided yet, 61 do not plan to apply.**





Source: This slide is based on the Agency's Consolidated Report on the progress of electricity and gas Projects of Common Interest for the year 2016, Vol. 2 – Gas http://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Publication/Consolidated%20Report%20on%20the%20progress%20of%20electricity%20and%20gas%20projects%20of%20Common%20Interest%20for%20the%20year%202016.pdf

Refined Monitoring Tools, Looking for Trends

- **New information support system ("VALVE"), remotely accessible:**
  53 PCIs – numbers down almost 2x from first PCI list, 98 investment items.
- **Project life-cycle cost data missing or incomplete for 66% of the PCIs**
- ***Only 6 PCIs were able to indicate the value of benefits***
- **PCIs are subject to CBA already at the stage of preparing the PCI list, so the *lack of any estimate of the value of a project's expected lifecycle costs and benefits casts fundamental doubts on the projects merits' level*.**
- **Recommended by the Agency:**
  - **Foresee in the CBA methodology ways and means to allow project promoters to assess / update the lifecycle value of the costs and the monetised benefits**
  - **Promoters to evaluate the costs and the benefits of their projects from the inception of the project and to track the progress of the costs and benefits over the entire project cycle**

Source: This slide and the next ones are based on the Agency's PCI Monitoring Report 2018, available from: https://www.acer.europa.eu/Official_documents/Publications/Pages/Publication.aspx

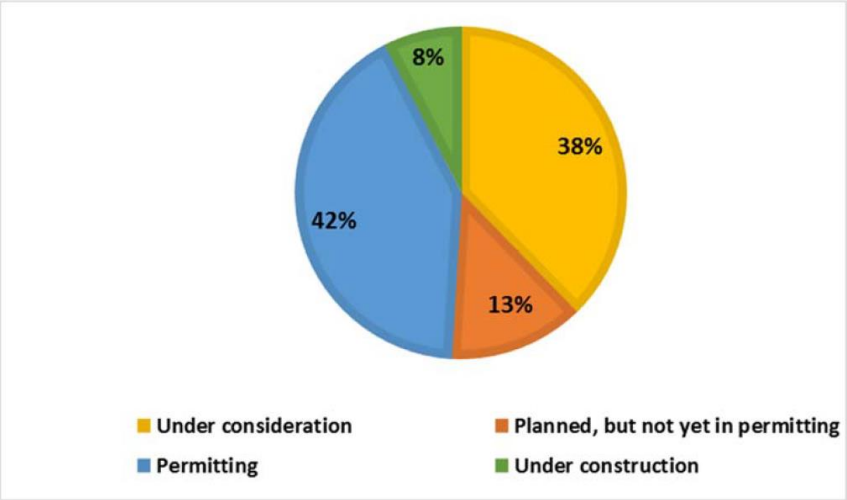
PCIs and NDPs

- NDPs typically include the national sections of cross-border gas transmission projects, but – as a rule – do not consider the cross-border effects of LNG or UGS projects located outside their geographical scope
- 12 PCIs are entirely absent from the NDP of their hosting countries (6 transmission, 5 UGS and 1 LNG project)
- Reasons for the absence of a PCI in the NDP (as reported):
  - No NDP exists in the country or the operators are not required to prepare and publish an NDP (8 instances);
  - The project is not developed by the TSO, but by an independent developer (6 instances);
  - The NDP was prepared at an earlier date compared to the date of the adoption of the PCI list, the PCI will be proposed for the next NDP (4 instances);
  - The promoter has not yet applied for a connection to the national transmission system and thus is out of the scope of the NDP (3 instances).

Advancement

- **25 PCIs were on the 2015 PCI list in the same form**
- **5 of these PCIs made progress, 13 PCIs remained unchanged, *7 PCIs registered since 2015 a setback or "reverse progress"*, i.e. they are currently less advanced than before**
- **Decreasing number of PCIs for which no work was reported**
- **However, in *many cases no work was carried out, but the PCI is still reported to be "on time"*, which looks inconsistent**
- **Only 5 PCIs advanced from one stage to the next one in 2017**

Status as of 31 January 2018:



Cost

- **Total estimated investment costs for all projects in the 2017 PCI list amounts to €43.5 billion, €9 billion less than in 2015**
- **Promoters intend to invest €25 billion in 2022 and 2023, i.e. about 57% of total in just two years**
- **At the same time, promoters indicated that the costs actually incurred are about €2.5 billion p.a.**
- ***For the investment plans actually to be carried out by 2023 as indicated by the promoters, the pace of investment would have to accelerate in the next few years by almost 300% p.a. compared to the observed levels since 2013***
- **SGC accounts for 54% of total investment costs for pipelines (incl. CS) - up from 42% in 2017**

Benefits

- ***Benefits assessment was provided in just 6 cases***
- **The results of this and of all the previous monitoring round carried out by the Agency *repeatedly demonstrate that promoters are not in a position to provide clear and easily understandable quantified (monetised) data about the benefits of their projects*, or have no intention of calculating monetised benefits**
- **The 2nd CBA methodology should enable promoters to properly assess the benefits of their projects, as repeatedly recommended by the Agency in its Opinions**
- **The Agency calls on project promoters to evaluate the monetised benefits of their projects and provide the result in their annual reports to the Agency**

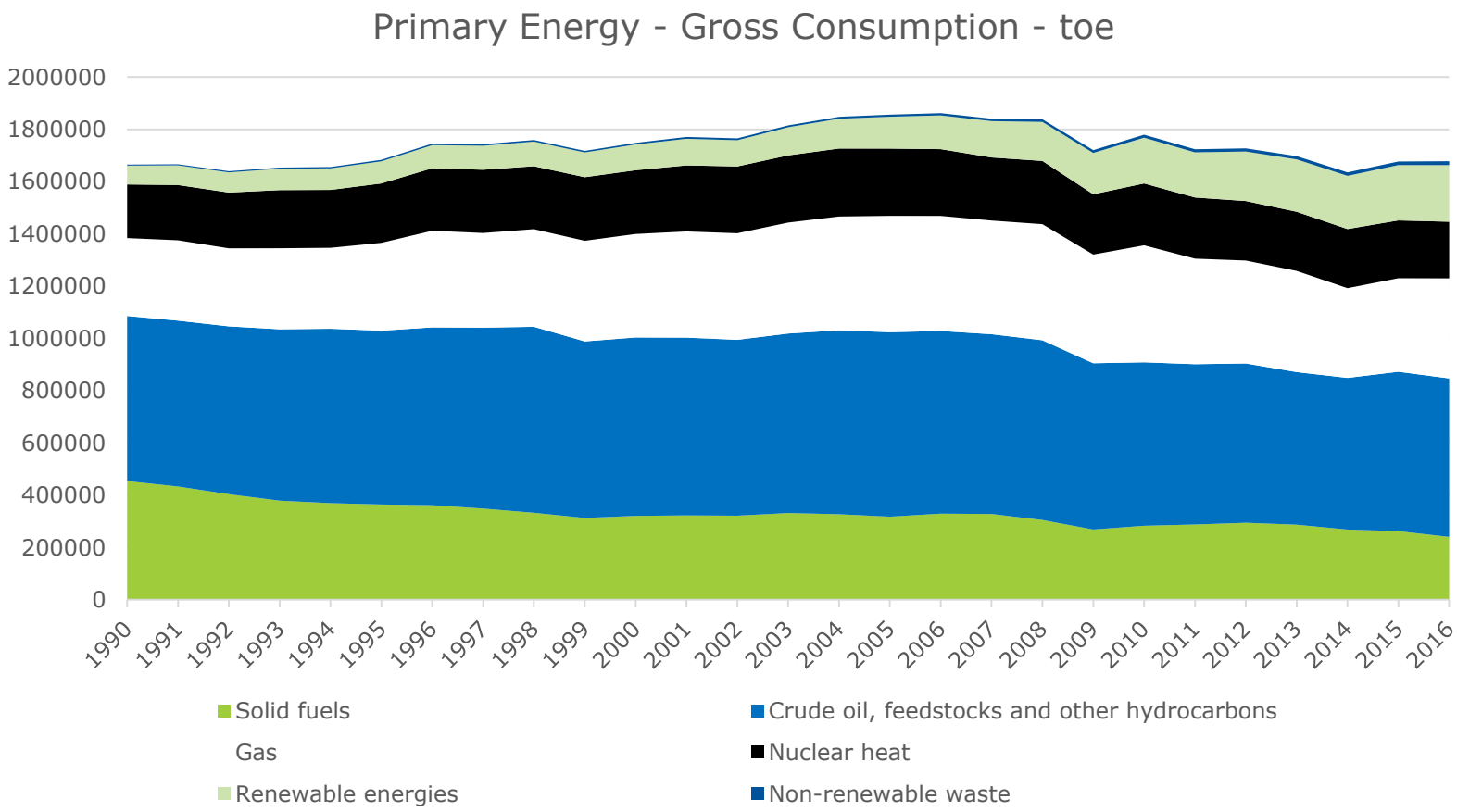
Facilitating Project Advancement and Continuity

- **Define a consistent set of key project milestones and *use aligned lists of project description items by key stakeholders* (NRAs / Agency, ENTSOG, the European Commission, and INEA)**
- **The 2-year period of validity of the PCI lists represents a much shorter timeframe than the typical life cycle duration of a PCI**
  - **The Agency sees the 2-year frequency for this exercise as appropriate: performance has to be consistently confirmed and reconfirmed over time, in an evolving context;**
  - **However, the Agency recommends that consideration is also given to better reconciling the duration of the PCI list validity with the observed duration of the typical PCI life cycle.**
- **The Agency recommends using the results of the monitoring of the progress of projects already on the PCI list in the selection for future PCI lists, to make sure that the continuous relevance and progress of projects over longer period of time are properly considered – <u>underway!</u>**

Facilitating Consistency of Proposed PCIs, Market Needs, and Regulatory Objectives

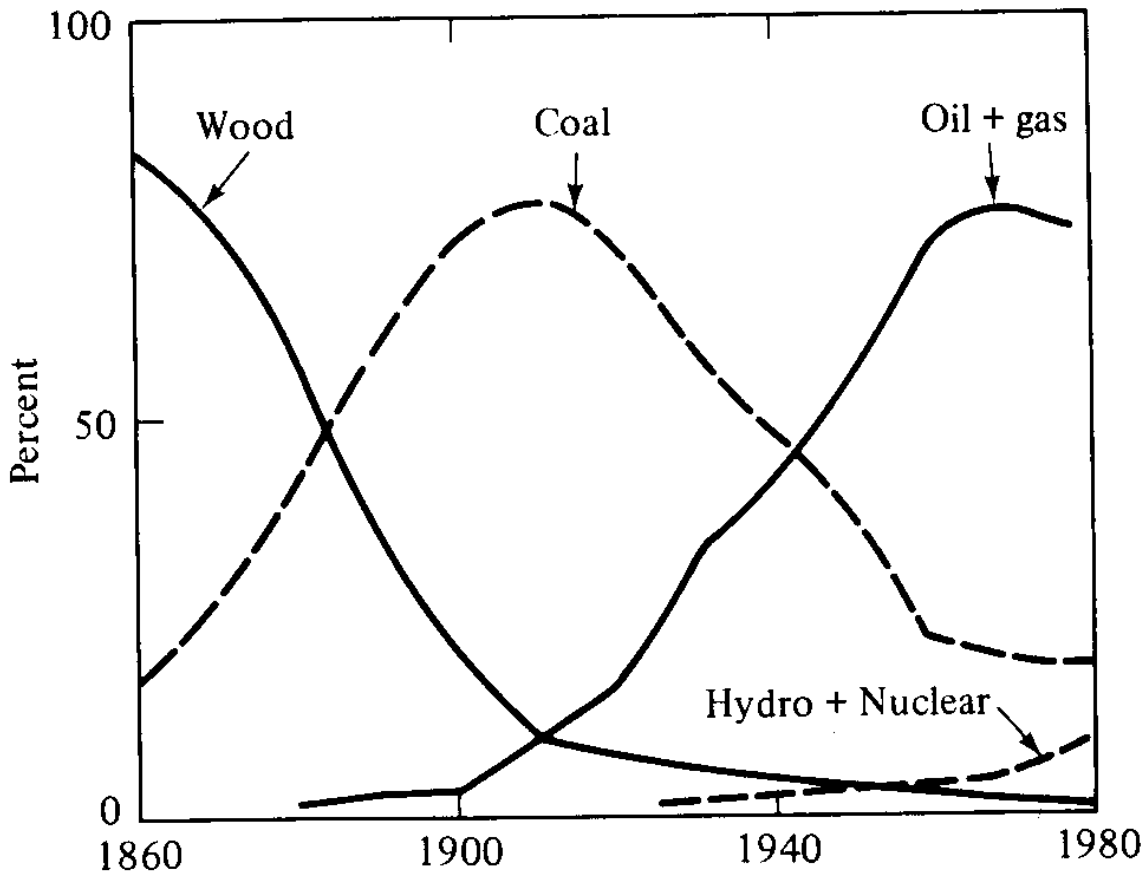
- Better definition of needs which projects could address: underway!
- Improved CBA: in discussions!
- Improved consistency of NDPs, TYNDP, PCI lists. Reconcile project milestones, project items by key stakeholders (NRAs / Agency, ENTSOG, the European Commission, and INEA) - via a common IT tool (in place!)
- Improved scrutiny of candidate PCIs based, inter alia, on monitoring experiences: underway!
- Consistency of PCI "identity" over the lifetime of a list … and beyond
- Reconcile the 2-year period of validity and the typical (much longer) life cycle duration of a PCI - look at ways to make sure that the continuous relevance and progress of projects over longer period of time are properly considered: selection criteria assessment underway!
- Accelerate the implementation of those PCIs that "pass the tests"
- Make sure that longer-term objectives (e.g. environmental) and short-term ones are aligned: clean energy as the main scenario - underway!

Scale, Timing …



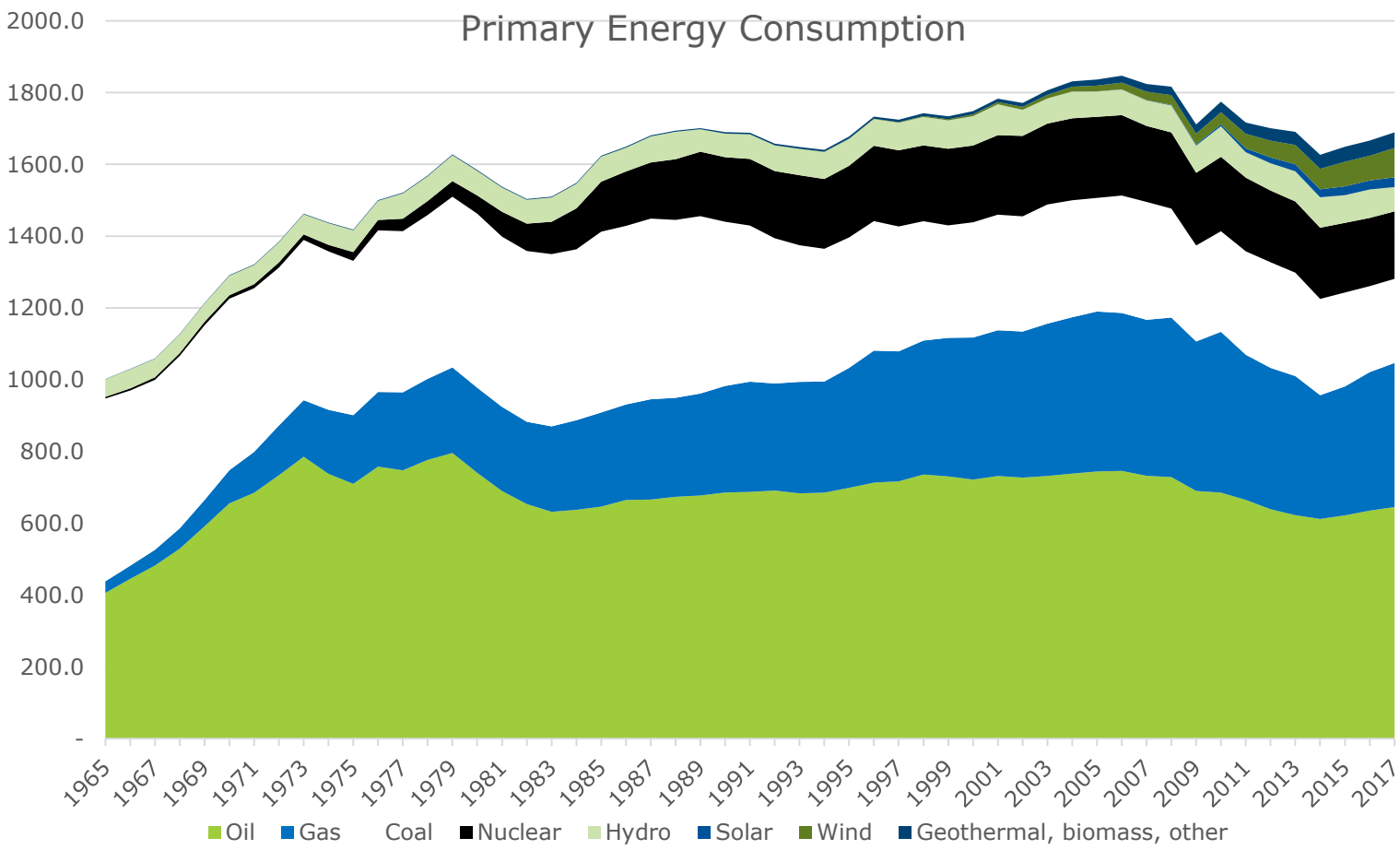
Source: Eurostat

Historically, primary energy transition took a long time: 60-70 years (or more) from lift-off to maximum share



Source: Eden et al., 1981. Illustrative example only.

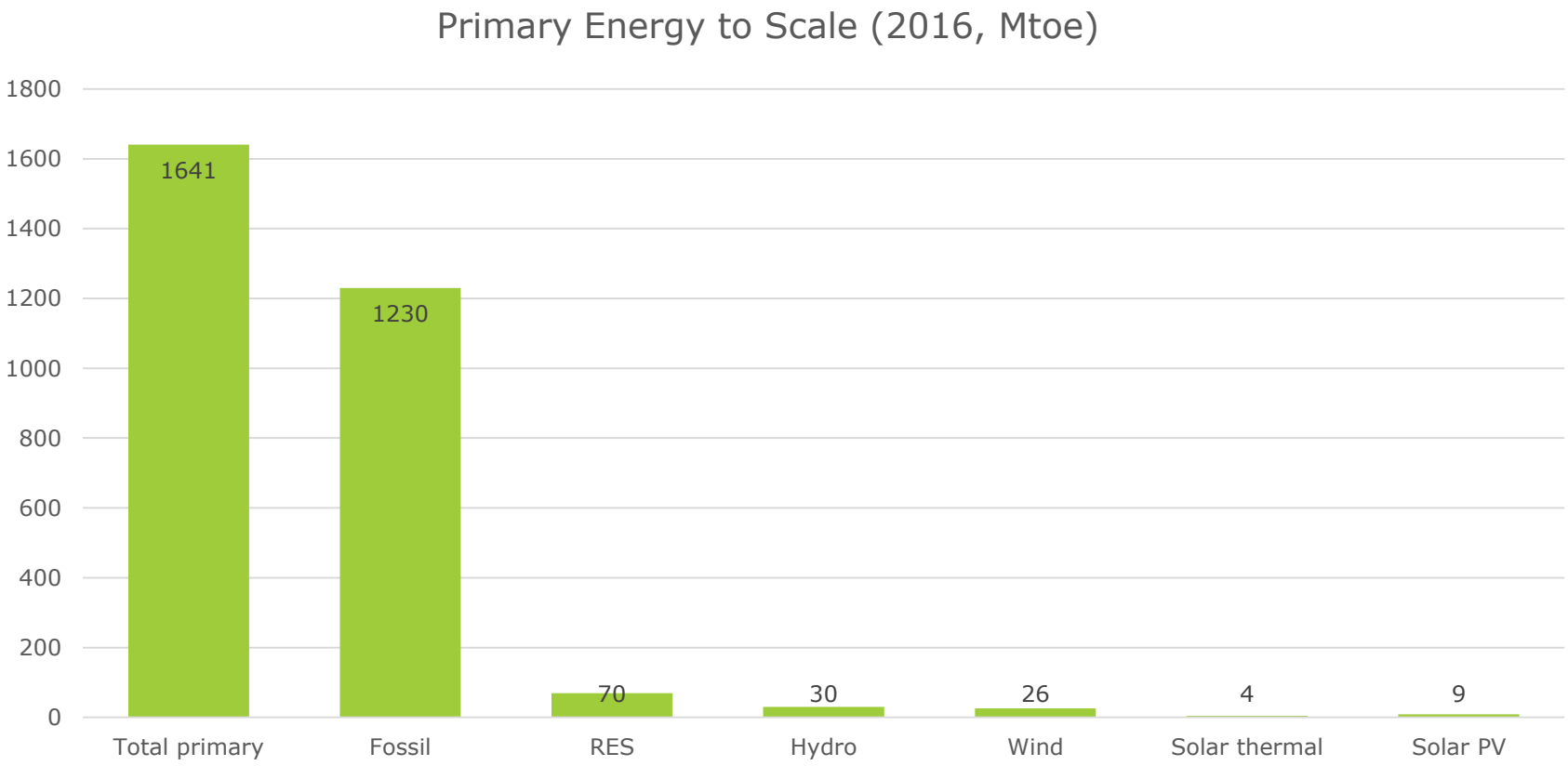
PtG, hydrogen, biogas are not primary – need primary resource input



Source: BP. Illustrative example only.

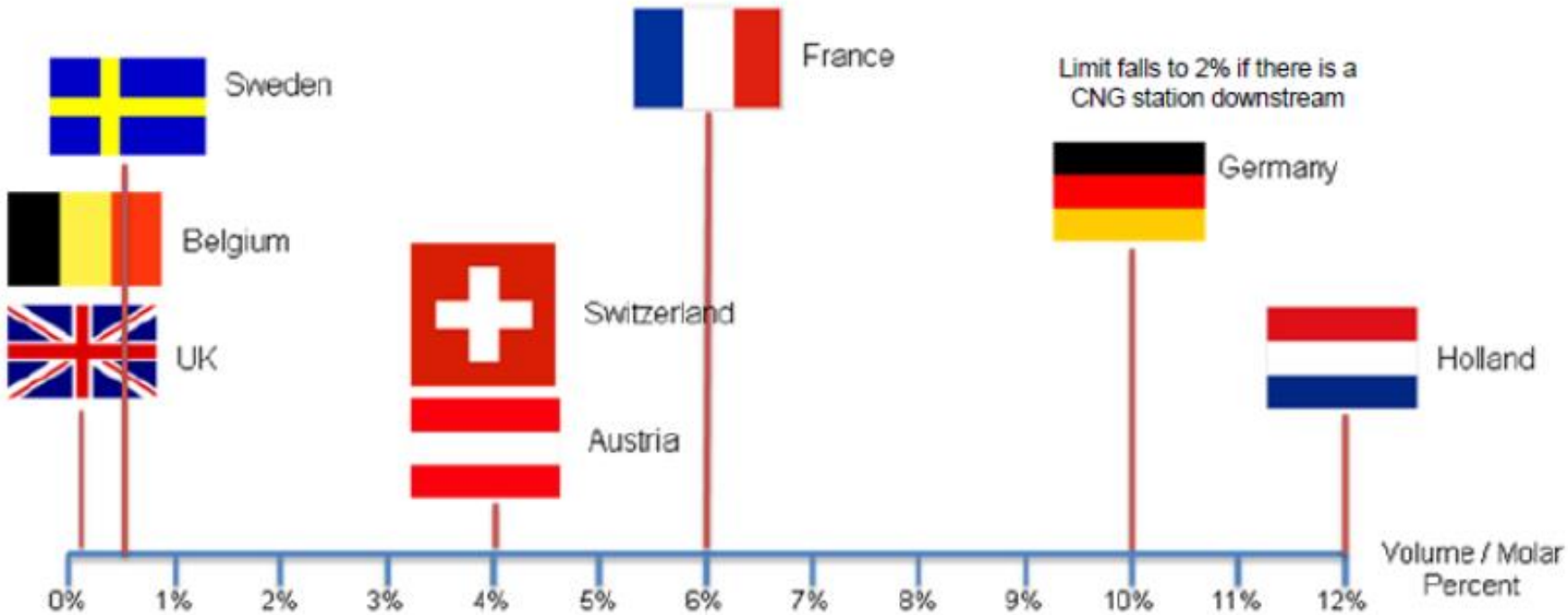
Scale: Primary Energy

- To reduce CO2 emissions by 1%, about 12 Mtoe of fossil fuels have to be replaced by other energy (RES, nuclear) = approx. total solar in 2016
- Total available electricity (all sources) is about 220 Mtoe, including about 35 Mtoe wind and solar
- End use pattern for oil (mostly transportation) is very different from those of electricity and natural gas (appliances, heat)



Source: Eurostat

Example: max H2 injection volume to HP grid pipe



Source: Natural Gas Pathways: Towards a Clean and Renewable Energy Future for California. Southern California Gas Company (Sempra Energy Utility), 2016.

PCIs, market needs, and regulatory issues in the context of future challenges

- MAJOR scale-up of RES, esp. wind and solar E, is needed if de-C PtG, H are to take hold any time soon. Ditto primary resources for biogas.
- Historically, many decades pass before a new primary energy source becomes the dominant one. Time is of the essence!
- PtG, H, biogas are manufactured resources: there is energy loss in conversion. To displace a unit of fossil energy RES, more than one unit of RES is needed: rate of RES growth (esp. wind, solar) must > the rate of fossil energy displacement in final energy demand. Current RES growth rate is lower than the one needed to be fossil-free by 2050.
- Primary energy consumption is unlikely to go down in absolute terms. So energy handling infrastructure will still be needed (PCIs, too). Just maybe not where that infrastructure is now and not of the "classic" kind.
- Energy is not "consumed", but mostly productively used – it is an input to making GDP, a "factor of production". There could be unintended consequences when one kind of energy is displaced by another one.
- For gas infrastructure, incl. PCIs, the central scenario is clean energy, discussions are about "how to", not "if".

Thank you for your attention