Policy drivers for energy data:
Post-COP21 energy data requirements

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Did COP-21 change something on energy?

“Greenhouse-gas emissions from the energy sector represent roughly two-thirds of all anthropogenic greenhouse-gas emissions and CO2 emissions from the sector have risen over the past century to ever higher levels. Effective action in the energy sector is, consequently, essential to tackling the climate change problem.”
IEA, World Energy Outlook-2015

No, it did not – but it enhanced the need for mitigation action
As energy is the core driver for GHG emissions, its relevance/importance remain high
INDCs/NDCs under Paris Agreement

The Paris Agreement

- Requires all Parties to put forward their **best efforts through “nationally determined contributions” (NDCs)** and to strengthen these efforts over time.

- Provides for **enhanced transparency of action and support through a more robust transparency framework for action and support.**

### INDCs/NDCs under Paris Agreement

<table>
<thead>
<tr>
<th>Country</th>
<th>Date</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morocco</td>
<td>08.05.2015</td>
<td>Unconditionally reduce 13% of GHG emissions by 2030 compared to 1990, increased to 15% under certain conditions (additional financial support and enhanced technology)</td>
</tr>
<tr>
<td>Mexico</td>
<td>30.03.2015</td>
<td>Unconditionally reduce 25% of GHG and Short-Lived Climate Pollutants emissions below BAU for 2030, to be increased by 40% subject to international carbon pricing, carbon border adjustments, technical cooperation, access to low-cost financial resources and technology transfer</td>
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<tr>
<td>EU</td>
<td>06.01.2015</td>
<td>At least 40% reduction of GHG emissions by 2030 compared to 1990</td>
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<tr>
<td>Russia</td>
<td>01.05.2015</td>
<td>Limiting anthropogenic GHG to 70-75% of 1990 levels by the year 2030, subject to the maximum possible account of absorbing capacity of forests.</td>
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<td>Singapore</td>
<td>03.07.2015</td>
<td>Reduce its emissions intensity by 36% from 2005 levels to 2020 and stabilize its emissions with the aim of peaking around 2020</td>
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<tr>
<td>Micronesia</td>
<td>24.11.2015</td>
<td>Cements to reduce GHG emissions by 28% by 2035 compared to levels in 2005 Conditional target: up to 35% emission reduction by 2035 compared to 2005 levels subject to availability of additional financial, technical and capacity building support from international community</td>
</tr>
<tr>
<td>US</td>
<td>31.05.2015</td>
<td>Reduce GHG emissions by 26-28 per cent below its 2005 level in 2025 and to make best efforts to reduce its emissions by 28%</td>
</tr>
<tr>
<td>China</td>
<td>30.06.2015</td>
<td>Achieve peaking of carbon dioxide emissions around 2030 and making the best efforts to peak early. Lower carbon dioxide emissions per unit of GDP by 60-65% from 2005 level. Increase share of non-fossil fuel in primary energy consumption to around 28%. Increase forest stock volume by around 4.5 billion cubic meters on 2005 level</td>
</tr>
</tbody>
</table>

INDCs/NDCs, as known by now, are ambitious – but more is needed. Achieving such targets is impossible without addressing GHGs in energy.
Energy-related component of NDCs

Measures to address GHG emissions from the energy sector

Energy supply

Energy use

Important to estimate emissions from lower-carbon technologies and also to evaluate the impact of penetration of non-carbon/renewable energy

Important to estimate impact of the introduction of measures to improve energy use efficiency and the transition to new standards in industries and buildings

Examples – INDC of China

- To increase the share of concentrated and highly-efficient electricity generation from coal;
- To lower coal consumption of electricity generation of newly built coal-fired power plants to around 300 grams of coal equivalent per kilowatt-hour;
- To expand the use of natural gas by 2020, achieving more than 10% share of natural gas consumption in the primary energy consumption and making efforts to reach 30 billion cubic meters of coal-bed methane production;
- To progressively promote the development of hydro power, on the premise of ecological and environmental protection and inhabitable maintenance;
- To develop nuclear power in a safe and efficient manner;
- To scale up the development of wind power;
- To accelerate the development of solar power;
- To proactively develop geothermal, bio-energy and marine energy;
- To promote low-carbon development of industrial sectors, implementing Action Plan of Industries Addressing Climate Change (2012-2020) and formulating carbon emissions control target and action plans in key industries;
- To research and formulate greenhouse gas emission standards for key industries;

- To effectively control emissions from key sectors including steel, iron and steel, nonferrous metal, building materials and chemical industries through energy conservation and efficiency improvement;
- To strengthen the management of carbon emissions for new projects and effectively control greenhouse gas emissions originating from the industrial production process;
- To construct a recycling-based industrial system, promoting recycling infrastructure in industrial parks, increasing the recycling and utilization of renewable resources and improving the production rate of resources;
- To phase down the production and consumption of HFC-23 for controlled uses, with its production to be reduced by 25% from the 2009 level by 2020.
Examples – INDC of USA

- Under the Clean Air Act, the United States Environmental Protection Agency is moving to finalize by summer 2015 regulations to cut carbon pollution from new and existing power plants.
- Under the Clean Air Act, the United States Department of Transportation and the United States Environmental Protection Agency are moving to promulgate post-2018 fuel economy standards for heavy-duty vehicles.
- Under the Clean Air Act, the United States Environmental Protection Agency is developing standards to address methane emissions from landfills and the oil and gas sector.
- Under the Clean Air Act, the United States Environmental Protection Agency is moving to reduce the use and emissions of high-GWP HFCs through the Significant New Alternatives Policy program.
- Under the Energy Policy Act and the Energy Independence and Security Act, the United States Department of Energy is continuing to reduce buildings sector emissions including by promulgating energy conservation standards for a broad range of appliances and equipment, as well as a building code determination for residential buildings.

Examples – INDC of Morocco

National Energy Strategy

- Provide 42% of the installed electrical power from renewable sources, of which 14% is from solar energy, 14% is from wind energy and 14% is from hydraulic energy by 2020.
- Achieve 12% energy savings by 2020 and 15% by 2030, compared to current trends.
- Reduce energy consumption in buildings, industry and transport by 12% by 2020 and 15% by 2030. The breakdown of expected savings per sector is 48% for industry, 23% for transport, 19% for residential and 10% for services.
- Install by 2030 an additional capacity of 3,900 MW of combined-cycle technology running on imported natural gas.
- Supply major industries with imported and regasified natural gas by pipelines.
The Paris Agreement

- Requires all Parties to put forward their **best efforts through “nationally determined contributions” (NDCs)** and to **strengthen these efforts over time**.

- Provides for **enhanced transparency of action and support through a more robust transparency framework for action and support**.

The current (pre-Paris) reporting/data needs

**Annex I Parties (44):**

- Very detailed GHG inventory annually:
  - Data in formatted tables (CRF)
  - Methodological report (NIR)
  - Additional information*
- Policy-related information (mitigation, adaptation, funding):
  - every 4 years (“national communication”),
  - with an interim update in 2 years (“biennial report”)
- Methodological basis:
  - 2006 IPCC guidelines

**Non-Annex I Parties (152):**

- Less detailed GHG inventory:
  - every 4 years in a “national communication” and an update in 2 years (“biennial update report”), depending on funding
- Policy-related information (mitigation, adaptation, funding and capacity building needs):
  - every 4 years in a “national communication” and an update in 2 years (“biennial update report”), depending on funding
- Methodological basis:
  - 1996 Revised IPCC guidelines
  - Can also use IPCC’s good practice guidance (2000, 2003)

* There is additional reporting for Kyoto Protocol Parties
** IPCC = Intergovernmental Panel on Climate Change
What may well change after Paris, in energy?

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Example: degree of detail may change (time/capacity)

<table>
<thead>
<tr>
<th>Table 1. National greenhouse gas inventory of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol and greenhouse gas precursors</th>
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<tbody>
<tr>
<td><strong>Greenhouse gas source and sink categories</strong></td>
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<tr>
<td>CO₂ emissions (Gg)</td>
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<tr>
<td>---------------------</td>
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<tr>
<td>Total emissions and removals X X X X X X X X</td>
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<td>1. Energy A. Post construction (sectoral approach) X X X X X X X X</td>
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<td>2. Manufacturing industries and construction X X X X X X X X</td>
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<td>3. Transport X X X X X X X X</td>
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<td>4. Other sectors X X X X X X X X</td>
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<td>B. Fugitive emissions from fuels X X X X X X X X</td>
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- **GREENHOUSE GAS SOURCE AND SINK CATEGORIES**
  - Total Energy
  - A. Post construction activities (sectoral approach)
  - Energy industries
  - Manufacturing industries and construction
  - Transport
  - Other sectors
- **Fugitive emissions from fuels**
  - Solid fuels
  - Oil and natural gas

1996 IPCC guidelines (for non-Annex I Parties under UNFCCC)
2006 IPCC guidelines (for Annex I Parties under UNFCCC)
In summary

• The energy sector is indisputably a major source of GHG emissions; sizable reductions in GHG emissions worldwide cannot happen without reducing energy-related emissions
• Assessing emissions from the energy sector is necessary for the preparation of a national GHG inventory; it is also necessary for assessing the impact of energy-related mitigation measures
• There are still large uncertainties about the exact nature of new or changed data/information requirements; the implementation of the post-Paris work programme is expected to bring clarify in that respect – this process has been already launched under the UNFCCC
• Most of such new requirements will emerge as part of the implementation of the new transparency framework established by Article 13 of the Paris Agreement; that framework is for both developed and developing countries but flexibility relating to the capacity of developing countries is part of the framework
• This is a change; developing capacity to respond to this change is important