Energy and Climate challenges

Closing 2020 and looking at 2021 key challenges

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Public webinar, December 17th, 2020
Part 1
Introduction

Christian Mollard & Pascal Charriaux, Enerdata
A Global Energy Expert

- **Independent** energy research company since 1991
- Spin-off of a research centre
- Expert in analysis and forecasting of global energy & climate issues
- In-house and globally recognized databases and forecasting models
- Headquartered in Grenoble (French Alps)
- Subsidiary in Singapore
- **Global reach:**
  - A wide network of partners across the globe
  - Clients and projects in Europe, Asia, Americas, Middle East, Africa
Some Enerdata Clients

Oil & Gas
- Total
- Eni
- Repsol
- SK
- E&C
- Qatar Petroleum
- KOGAS
- Gazprom
- ENGIE
- Iberdrola
- GRTgaz
- IGU

Power
- KEPCO
- KCN
- Samsung Power
- Mitsubishi Hitachi
- Siemens
- GE Power
- GE Energy
- Iberdrola
- Enedis
- Axpo
- Terna

Equipment
- KANE
- Sumitomo
- Ansaldo Energia
- CFF
- Accor
- GE
- Siemens
- GE Power
- Wärtsilä
- Orano
- Moody's

Consultancies & Financial Institutions
- McKinsey & Company
- Accenture
- CPP Investment Board
- CFE
- Moody's

Government & Institutions
- IAEA
- World Energy Council
- UN Alliance of Civilizations
- IRENA
- Natural Resources
- Rte
- IEA
- NREL
- WORLD BANK
- IDB

University & Research
- University of Cambridge
- Boston University
- CRIEPI
- Korea Energy Economics Institute
- IEA
- ADB
- IAEE
- Enerdata
ABOUT CLIMATE TRANSPARENCY AND THIS REPORT

COMPARING G20 CLIMATE ACTION & RESPONSES TO THE COVID-19 CRISIS

14 PARTNERS
100 INDICATORS
20 MAJOR ECONOMIES

Our global partnership brings together experts from research organisations and NGOs in the majority of the G20 countries.

Our mission is to encourage ambitious climate action in the G20 countries: we inform policy makers and stimulate national debate.

The Climate Transparency Report is the world’s most comprehensive annual review of G20 climate action: we provide concise and comparable information on mitigation, finance and vulnerability.

The Climate Transparency Report | 2020 consists of this summary report and an in-depth country profile for each of the G20 countries.

Summary Report Profiles  Country Profiles
PARTNERS

DATA PARTNERS

FUNDERS

Supported by:
Federal Ministry for the Environment, Nature Conservation and Nuclear Safety
based on a decision of the German Bundestag
Where do we stand at the end of 2020? What is at stake in 2021?

- Huge sanitary and economic crisis leading to very important drops in the activity
  → in energy consumption → in CO₂ emissions
- Many key questions arising
  - Is this drop linked with structural changes or only conjunctural?
  - What will be the impact of the recovery plans on the future of the energy systems?
  - Will the crisis enable acceleration on our decarbonisation pathways?
- It is not only about covid & economy. Political changes and societal consciousness increase might also ease the path forward...
  - What can we expect from the new NDC & COP26 in 2021?
  - Where are the main changes in the global picture (finance, youth, local vs global...)?
Fossil fuels still 81.5% of G20 primary energy (2019)

Coal decreased by 2% in G20 but many countries switching to oil & gas instead of renewables

Enerdata & Climate Transparency webinar - Dec 2020

Energy mix in G20 countries in 2019

- Fossil fuels decreased by 1.7% in OECD G20 (coal -11%)
- Fossil fuels increased by 1.8% in non-OECD G20 (coal 0%)

In a 1.5 – 2°C scenario, fossil fuels should decrease
- to 60-65% by 2030
- and 30-35% by 2050

❖ All fossil fuels are not equal!
❖ Depends also on the demand

Source: Enerdata, 2020
CO₂ Emissions projected to decrease by 7.5% in 2020

Projected % change in G20 GDP and energy-related CO₂ emissions (2020)

Source: Enerdata, 2020
Part 2

Financing the transition
Recovery plans consistency

Charlene Watson, Overseas Development Institute
MAKING FINANCIAL FLOWS CONSISTENT WITH THE PARIS AGREEMENT
Tools to align financial flows with climate goals
G20 members are making progress in transforming the financial system

FINANCIAL POLICIES & REGULATIONS
Includes: green finance principles, risk disclosure, climate stress tests, enhanced capital liquidity requirements.

FISCAL POLICIES
Includes: ending fossil fuel subsidies, subsidising low-carbon technology, carbon pricing.

PUBLIC FINANCE
Includes: domestic and international public finance and investment, climate finance.

Source: Climate Transparency report, 2020
### Fiscal Policies

#### Carbon Pricing Schemes

18 G20 countries are implementing explicit carbon-pricing schemes, such as carbon taxes and emission trading schemes (ETS) – India and Australia are the exceptions.

<table>
<thead>
<tr>
<th><strong>Highest Carbon Tax (USD/tCO₂e)</strong></th>
<th><strong>Highest % of Emissions Covered by Carbon Tax</strong></th>
<th><strong>Top Carbon Revenues in 2019 (USD)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>France (48.6), South Korea (31.2), and the EU (27.9)</td>
<td>South Africa (80%), South Korea (70%), and Japan (68%)</td>
<td>EU 17.5bn, France 10.1bn, Canada 5.6bn, Germany 3.6bn, USA 3.1bn, Japan 2.4bn, Italy 1.5bn, UK 1.2bn</td>
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Source: Climate Transparency report, 2020
## Financial Policies & Regulations

### G20 economies can lead in greening their financial systems

<table>
<thead>
<tr>
<th>Principles to align prudential and climate change objectives</th>
<th>Disclosing climate-related risks to financial institutions</th>
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<tr>
<td><strong>17</strong> G20 COUNTRIES initiated discussions or are already implementing some form of green finance principles (India, Saudi Arabia, and South Korea are the exceptions).</td>
<td><strong>13</strong> G20 COUNTRIES have implemented or are discussing climate risk disclosure requirements. In Brazil, China and France such disclosures are already mandatory.</td>
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<tr>
<th>Evaluating the resilience of the finance system to climate shocks</th>
<th>Limiting commercial banks’ exposure to climate-related risks and incentivising low-carbon lending</th>
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<tr>
<td><strong>7</strong> G20 COUNTRIES introduced climate-related risk assessment and climate stress-test, only in Indonesia are these mandatory.</td>
<td><strong>5</strong> G20 COUNTRIES use some form of enhanced capital and liquidity requirements (China, India, Indonesia, Japan, and South Korea).</td>
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**GREEN FINANCIAL PRINCIPLES**

G20 countries have acknowledged the need to adjust national financial system architectures.

**MACRO-PRUDENTIAL POLICIES**

G20 countries are making steady progress on advancing macro-prudential policies aimed at reducing and managing the risks that climate change poses to the financial system.

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*Source: Climate Transparency report, 2020*
Fiscal Policies

G20 Fossil Fuel subsidies in 2019

Absolute fossil fuel subsidies: China, Mexico, India, Russia, Italy, France, Indonesia, and the USA were all above the G20 average in 2019.

Per unit of GDP:
Mexico, South Africa, Australia, Argentina, Italy, France, and Russia are all above the G20 average.
G20 countries (excluding Saudi Arabia, Turkey, and the UK) provided USD 130bn in subsidies to coal, oil, and gas in 2019. This represents an increase on USD 117bn in 2018.
Comparing G20 Responses to the COVID-19 Crisis
COVID-19 has had a dramatic effect on Emissions, but recovery packages risk rebound

G20 GDP & emissions projected to decrease in 2020
Projected % change in G20 GDP and energy-related CO₂ emissions (2020)

G20 responses reinforcing negative climate trends
Greenness of Stimulus Index (October 2020)

Source: Enerdata, 2020

Source: Climate Transparency report, 2020
Insights for a **Green Recovery**

Greening COVID-19 responses can be used to align recovery with long-term goals

1. **Invest in** sustainable physical infrastructure
2. **Invest in** nature-based solutions & the environments
3. **Invest in** education, research & development
4. **Introduce** conditionality for greener bailouts
5. **Reinforce** police, regulations, and incentives **for a sustainable future**

**Source:** Climate Transparency report, 2020
Part 3

Climate policies & negotiations
Key learnings from 2020?
What is at stake in 2021 (new NDCs, COP26)?

Gerd Leipold, Climate Transparency
Part 4

2020 to 2025 - Key years to come...
What should we monitor in 2021?

Pascal Charriaux, Enerdata
G20 scenarios up to 2025

Share of electricity in final demand 2025
EnerBase 26%
EnerBlue 27%
EnerGreen 28%

Source: Enerdata modelling, Dec. 2020
What will we closely monitor in 2021?

• New NDCs & Zero Net Emissions commitments
  – Scope, ambitions & completeness
  – **Short term** (2021 – 2025) objectives consistency

• Trends in key decarbonisation enablers
  – **Electrification** of end-uses & **Power mix** (capacities & production)
  – Decrease in **coal** % in the primary mix
  – Development of other decarbonised energy vectors
  – **Energy efficiency** policies acceleration
  – **Energy sufficiency** integration in demand monitoring

• Other key actors' trends
  – Industrial segments, regions & cities...
Q & A session
Conclusions
2021

ENERGY SUFFICIENCY

ENERGY EFFICIENCY

DECARBONISATION

WE WISH YOU A GOOD TRIP ON NET ZERO EMISSIONS PATHWAYS!

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