Transforming the Air, Sea, and Land Freight Transport Sector - SWC50 Webinar
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THE ONLY GLOBAL RENEWABLE ENERGY MULTI-STAKEHOLDER COMMUNITY

GOVERNMENTS
Afghanistan, Austria, Brazil, Denmark, Dominican Republic, Germany, India, Mexico, Norway, Republic of Korea, South Africa, Spain, UAE, USA

NGOs
CAN-I, CLASP, CCA, Club-ER, CC35, Energy Cities, EHP, FER, Global 100%RE, GFSE, Greenpeace Intl, GWNET, ICLI, IEC, ISEP, JVE, MFC, Power for All, REEEP, REI, RGI, SCI, SLOCAT, SEforAll, WCRE, WFC, WRI, WWF

SCIENCE & ACADEMIA
AEE INTEC, CEEW, Fundacion Bariloche, Higher School of Economics (Russia), IIASA, ISES, NREL, SANEDI, TERI

INTERGOVERNMENTAL ORGANISATIONS
ADB, APERC, ECREEE, EC, GEF, IEA, IRENA, IsDB, RCREEE, UNDP, UNEP, UNIDO, World Bank

INDUSTRY ASSOCIATIONS
ACORE, AMDA, ALER, ARE, APREN, CREIA, CEC, EREF, GOGLA, GSC, GWEC, IREF, IGA, IHA, RES4Africa, Solar Power Europe, WBA, WWEA
Renewable power generation capacity additions remain ahead for the sixth year in a row.
INCREASING ENERGY DEMAND AND FOSSIL FUEL USE

The share of fossil fuels in final energy demand has **barely changed over the past decade**.

**Estimated Renewable Share of Total Final Energy Consumption**
2009 and 2019

- **80.3%** Fossil fuels in 2009
- **80.2%** Fossil fuels in 2019
- **8.7%** Modern renewables in 2009
- **8.7%** Modern renewables in 2019
- **11.0%** Others in 2009
- **11.2%** Others in 2019

Source: Based on IEA data.
TRANSPORT HAS THE LOWEST SHARE OF RENEWABLE ENERGY

Renewable Energy in Total Final Energy Consumption by Final Energy Use, 2018

- Heating and Cooling: 51% Renewable energy (10.2%)
- Transport: 32% Renewable energy (3.4%)
- Power: 17% Renewable energy (27.1%)

Note: Data should not be compared with previous years because of revisions due to improved or adjusted methodology.

Source: Based on IEA data.
The fossil fuels share in transport has decreased only 1 percentage point over the past decade.

At the same time, transport energy demand has grown more than 22%.
Energy demand has grown much more for transport than other sectors and was met almost entirely by fossil fuels.

Source: Based on IEA data.
Transport emissions are rapidly expanding in almost every sector.

Note: Other pipeline and non-specified transport increased 28% during this period.
Source: SLOCAT and IEA.
The transport sector has seen the least progress in achieving 2020 targets.
Support for biofuels in transport in only 65 countries.

Targets for advanced biofuels in only 11 countries.
FEW COUNTRIES HAVE TARGETS FOR BOTH EVS & RENEWABLES

Targets for Renewable Power and Electric Vehicles
as of End-2020

Only 8 countries with targeted bans on internal combustion engine vehicles have 100% renewable power targets.

Source: REN21 Policy Database.
As of early 2021, only 7% of COVID recovery spending was allocated to renewables.

6X MORE RECOVERY FUNDING FOR FOSSIL FUELS

Energy Investments in COVID-19 Recovery Packages of 31 Countries
January 2020 to April 2021

- 42% Fossil fuels
- 29% Enabling technologies and energy efficiency
- 22% Other
- 7% Renewables

Source: EnergyPolicyTracker.org.
# RENEWABLE ENERGY CRITICAL IN THE TRANSPORT TRANSITION

Avoid-Shift-Improve Framework in the Transport Sector

**AVOID**

- Avoid or reduce the need for motorised travel
  - Transport demand management
  - Mixed-use, transit-oriented development
  - Active transport (e.g., walking, cycling)
  - Telecommuting

**SHIFT**

- Shift to more efficient, less carbon-intensive modes
  - Public transport, intercity and high-speed rail, and new mobility services (powered by renewable energy)
  - Zero emission logistics and last-mile delivery

**IMPROVE**

- Improve efficiency, vehicle technology and fuels
  - Fuel economy
  - Renewable fuels (e.g., sustainable biofuels, renewable electro-fuels)
  - Renewable-based electric vehicles
STRUCTURAL SHIFT TO RENEWABLES REQUIRED

- **Rapid** transition needed from fossil fuels to a renewable energy-based system
- **Net zero targets** have to be backed up by renewable energy targets and support policies
- **Measure progress** towards global climate and sustainable development goals with the **right indicator**: the share of renewable energy
- Integrate the renewable energy share as a KPI at **every level of decision making**
WHAT WILL THE FUTURE OF TRANSPORT LOOK LIKE?

- Next edition of the Renewables Global Futures Report (GFR) will ask: “What will be the role of renewables in decarbonising the transport sector?”
- Part of NDC Transport Initiative for Asia
- For more info + to sign up to participate: ren21.net/GFR
  - Survey
  - Interviews
  - Workshops
  - Peer review
  - Outreach
check on historical RE heat mandates number in sheet previously updated with Barbel's help

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SLOW GROWTH IN RENEWABLE TRANSPORT

KEY BARRIERS

- Sector heavily relying on fossil fuel
  - Fossil fuel subsidies – no level playing field
- Demand increasing faster than other sectors
- Lack of policy support frameworks
  - Holistic strategies missing
  - Direct linking between EVs and renewables is limited
  - Avoid-Shift-Improve often missing renewable energy
- Investment in supporting infrastructure needed (e.g., EV charging)
- Technological advances needed for renewables in advanced biofuels, maritime and aviation sectors
TRANSPORT CARBON INTENSITY IMPROVING SLOWLY

In OECD countries, the carbon intensity of transport improved at an annual rate of 0.64% between 2008 and 2017.
Only 5 G20 countries had 2020 targets for renewables in final energy, while none has a target for renewable energy in transport.
For the first time ever, the number of countries with renewable energy support policies did not increase.
As of early 2021, 64% of COVID recovery spending was allocated to fossil fuels or other non-sustainable energy sources.

Source: EnergyPolicyTracker.org.
At least nine countries produced more than 20% of their electricity generation from VRE in 2020.
RENEWABLE POWER COSTS KEEP FALLING

Costs for solar PV and CSP as well as onshore and offshore wind have fallen sharply over the past decade.

Source: IRENA.
### MANY NET ZERO TARGETS ANNOUNCED IN 2020

New Net Zero Emission and Carbon-Neutral Targets Set by Countries/Regions in 2020

#### Net zero emission targets

<table>
<thead>
<tr>
<th>Country/region</th>
<th>2019 CO₂ emissions (kilotonnes)</th>
<th>2019 CO₂ emissions (% of world total)</th>
<th>Target year</th>
<th>Legal status</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU-27</td>
<td>2,930,069</td>
<td>77.3%</td>
<td>2050</td>
<td>Proposed</td>
</tr>
<tr>
<td>Austria</td>
<td>72,363</td>
<td>0.19%</td>
<td>2040¹</td>
<td>In law/policy document</td>
</tr>
<tr>
<td>Canada</td>
<td>584,846</td>
<td>1.54%</td>
<td>2050</td>
<td>Proposed</td>
</tr>
<tr>
<td>Hungary</td>
<td>53,183</td>
<td>0.14%</td>
<td>2050</td>
<td>In law/policy document</td>
</tr>
<tr>
<td>Jamaica</td>
<td>7,442</td>
<td>0.02%</td>
<td>2050</td>
<td>Pledge</td>
</tr>
<tr>
<td>Laos PDR</td>
<td>6,783</td>
<td>0.02%</td>
<td>2050</td>
<td>Pledge</td>
</tr>
<tr>
<td>Maldives</td>
<td>913</td>
<td>&lt;0.01%</td>
<td>2040²</td>
<td>Pledge</td>
</tr>
<tr>
<td>Mauritius</td>
<td>4,332</td>
<td>0.01%</td>
<td>2050</td>
<td>Pledge</td>
</tr>
<tr>
<td>Nepal</td>
<td>16,019</td>
<td>0.04%</td>
<td>2050</td>
<td>NDC</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>384,906</td>
<td>0.06%</td>
<td>2050³</td>
<td>In law/policy document</td>
</tr>
<tr>
<td>The Vatican</td>
<td>N/A</td>
<td>N/A</td>
<td>2050</td>
<td>Pledge</td>
</tr>
</tbody>
</table>

#### Carbon-neutral targets

<table>
<thead>
<tr>
<th>Country/region</th>
<th>2019 CO₂ emissions (kilotonnes)</th>
<th>2019 CO₂ emissions (% of world total)</th>
<th>Target year</th>
<th>Legal status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina</td>
<td>198,414</td>
<td>0.05%</td>
<td>2050</td>
<td>NDC</td>
</tr>
<tr>
<td>Barbados</td>
<td>3,837</td>
<td>0.01%</td>
<td>2050</td>
<td>Pledge</td>
</tr>
<tr>
<td>China</td>
<td>11,535,200</td>
<td>3.15%</td>
<td>2060</td>
<td>Pledge</td>
</tr>
<tr>
<td>Japan</td>
<td>1,557,117</td>
<td>0.36%</td>
<td>2050</td>
<td>Pledge</td>
</tr>
<tr>
<td>Kazakhstan</td>
<td>27,265</td>
<td>0.28%</td>
<td>2060¹</td>
<td>Pledge</td>
</tr>
<tr>
<td>Korea, Republic of</td>
<td>63,670</td>
<td>1.71%</td>
<td>2050</td>
<td>NDC</td>
</tr>
<tr>
<td>Malawi</td>
<td>1,516</td>
<td>&lt;0.01%</td>
<td>2050</td>
<td>Pledge</td>
</tr>
<tr>
<td>Nauru</td>
<td>N/A</td>
<td>N/A</td>
<td>2050</td>
<td>Pledge</td>
</tr>
<tr>
<td>Slovenia</td>
<td>15,365</td>
<td>0.04%</td>
<td>2050</td>
<td>National plan/strategy</td>
</tr>
<tr>
<td>South Africa</td>
<td>494,862</td>
<td>0.13%</td>
<td>2050³</td>
<td>National plan/strategy</td>
</tr>
</tbody>
</table>

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*¹: In law/policy document
*²: Proposed
*³: In law/policy document

Only about one-fifth of all announced national net zero targets are actually in law or have been achieved.