The IEA's outlook for sustainable bioenergy

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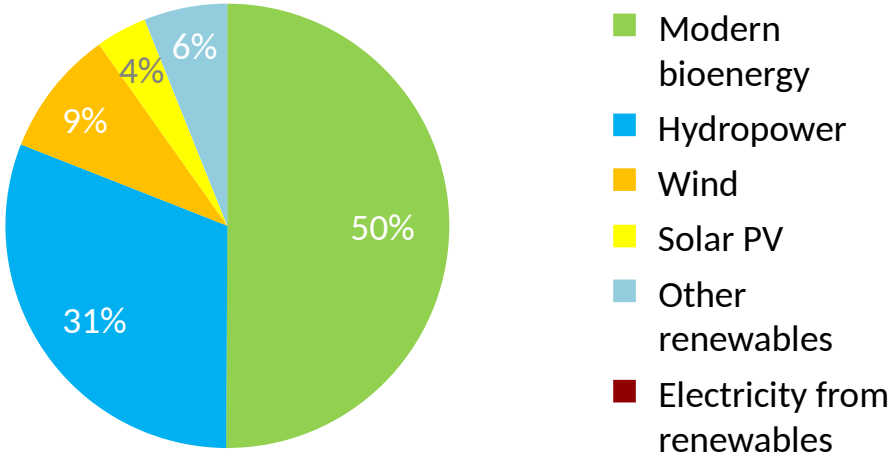
Utrecht, 23rd May 2019

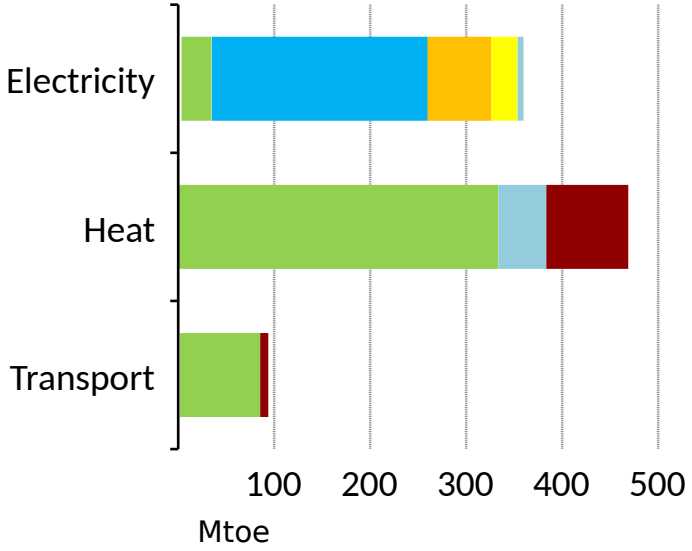
IEA

Modern bioenergy: the overlooked giant of renewables

Total final energy consumption from renewables, 2017

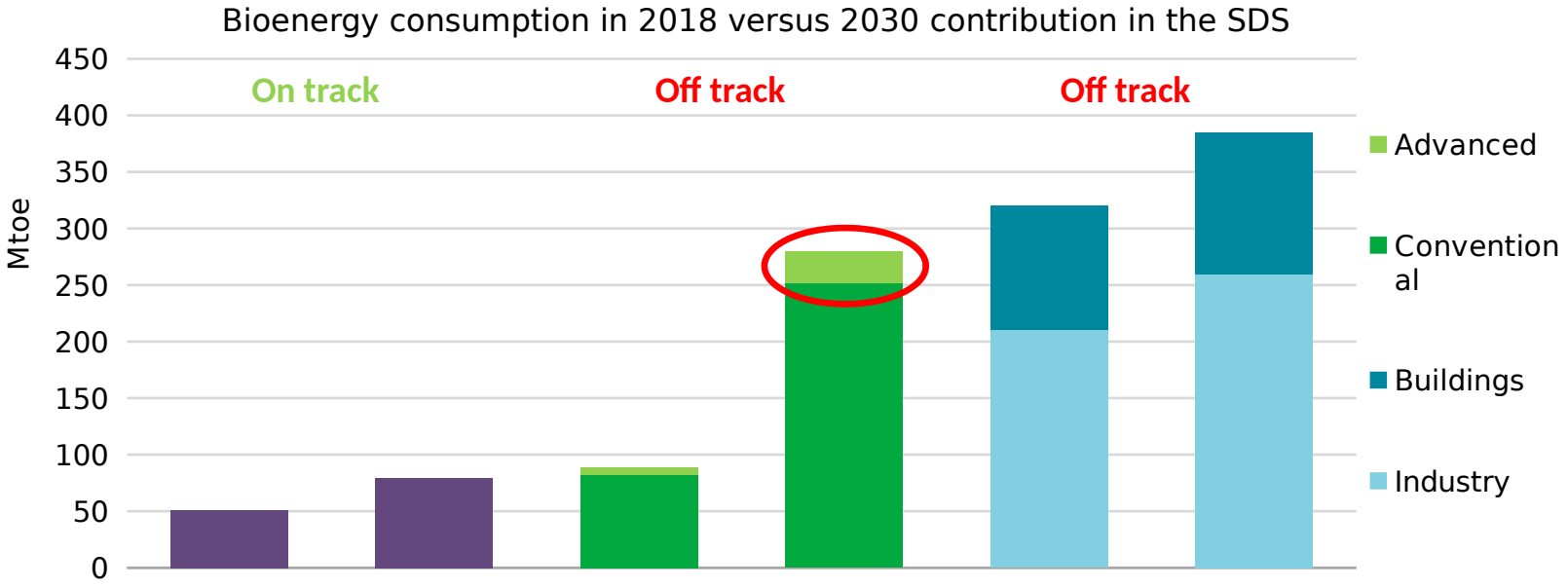


Total final energy consumption from renewables by sector, 2017



Modern bioenergy accounts for 50% of all renewables in total final energy consumption.
A large proportion of bioenergy is already from low sustainability risk waste and residue feedstocks.

Bioenergy must accelerate to get on track with the SDS

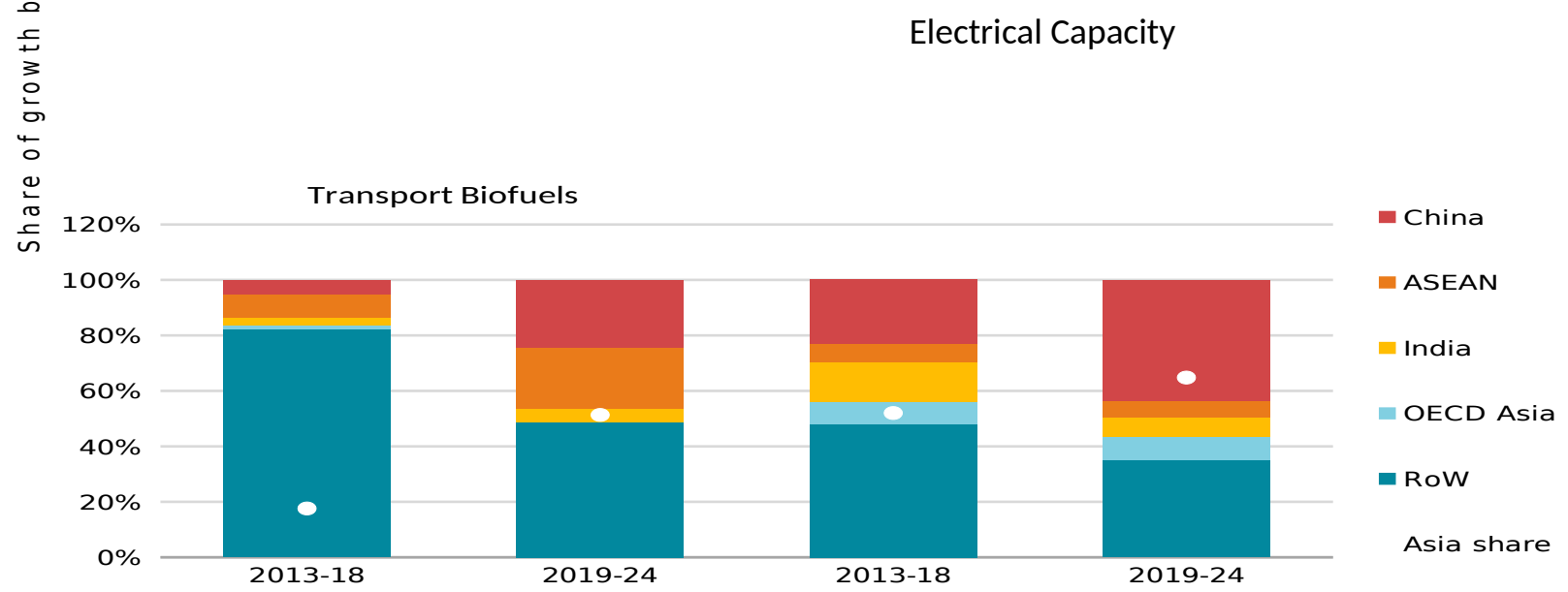


SDS = Sustainable Development Scenario

Only sustainable bioenergy has a place in the SDS. Therefore, the enhanced policy support needed to accelerate deployment must come with rigorous sustainability governance frameworks.

Asia leads biofuel and biomass electricity market growth

Share of biofuels production (left) and electrical capacity (right) growth, 2013-18 and 2019-24

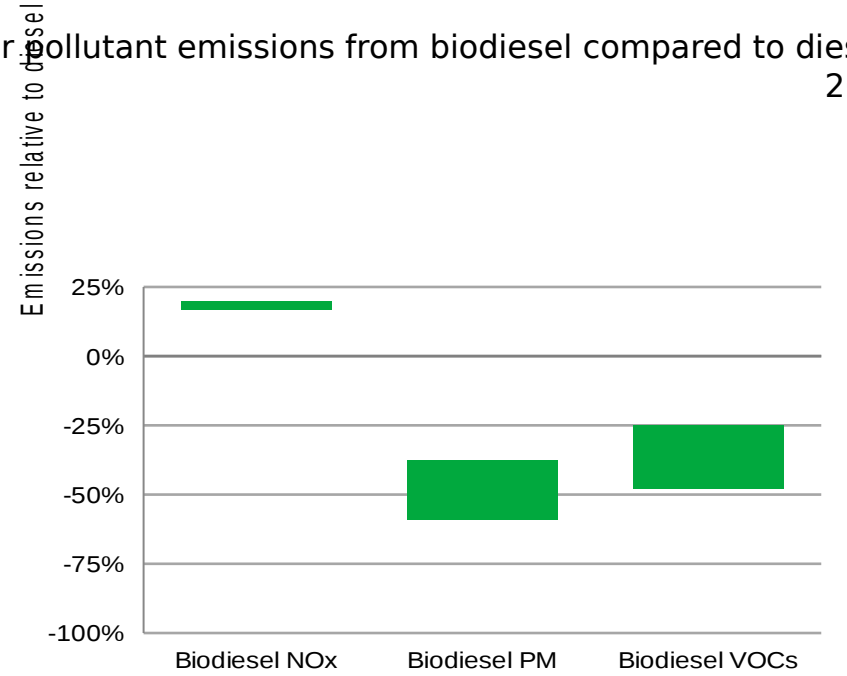


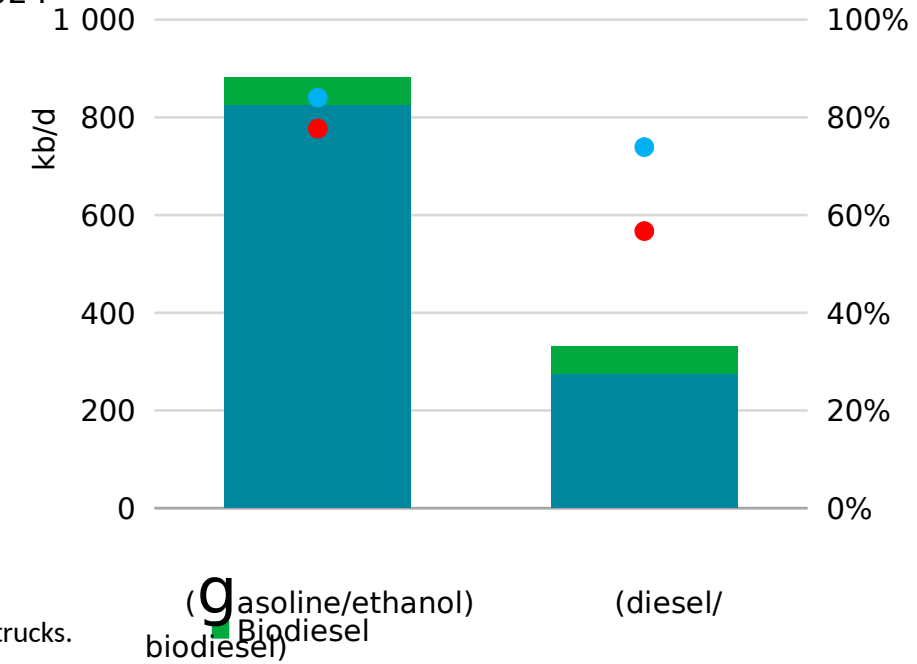
RoW = Rest of world

Currently there are limited sustainability governance frameworks in Asian markets. Policy frameworks appropriate to the fuels and feedstocks in question need to be introduced in growing markets.

There are multiple drivers for biofuel market development

Air pollutant emissions from biodiesel compared to diesel (left) assessed security of supply benefit from biofuels 2024

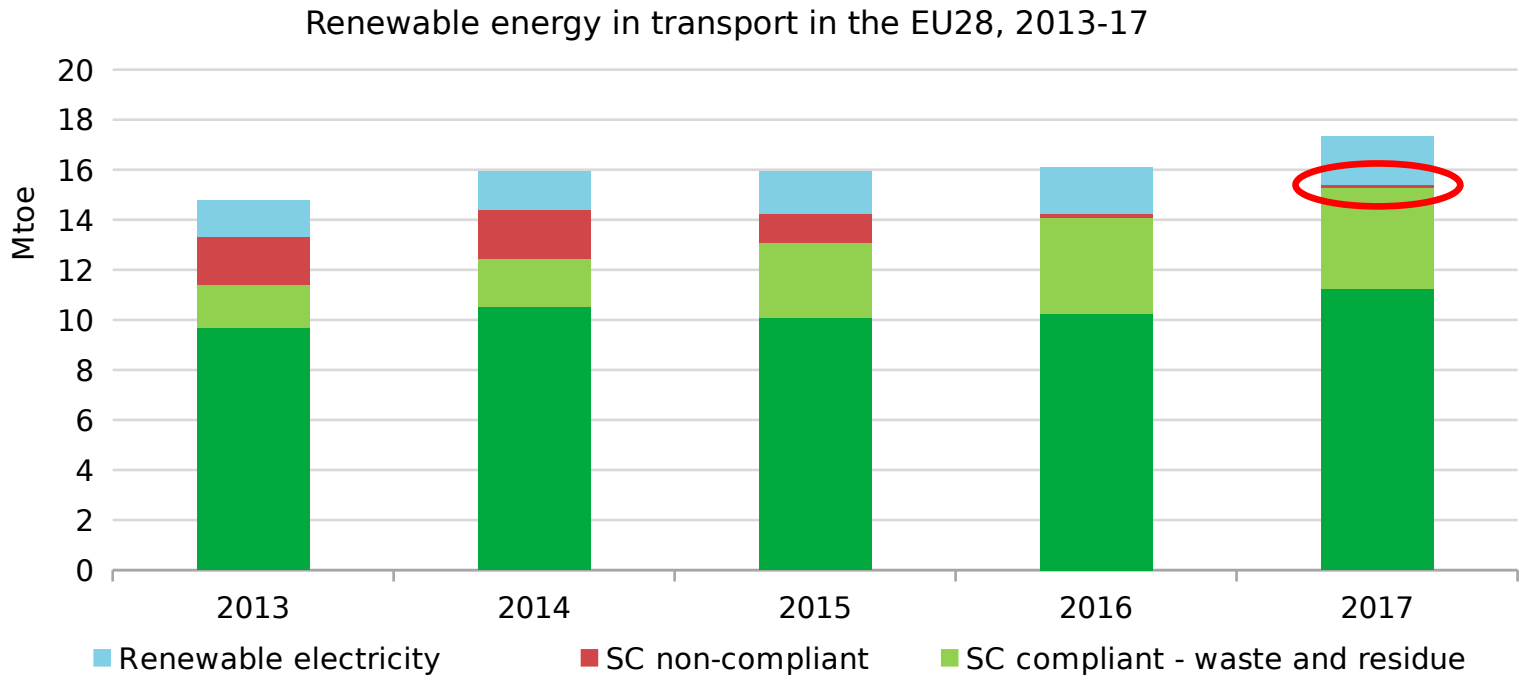




Air pollutant analysis from IEA AMF TCP on Euro 3 medium freight trucks.

CO_2 emissions reduction is an important consideration, but improving air quality, enhancing security of supply, creating demand for agricultural output and waste management are also key factors.

EU governance of biofuel sustainability is robust



SC = sustainability criteria. Source: Eurostat, data as reported by SHARES tool and includes multipliers.

The EU framework monitors and reports on biofuel sustainability performance. Effective governance arrangements are the foundation for ensuring sustainability and need to be extended to new markets.

Some considerations for bioenergy sustainability

- **New policy impetus is needed to bring transport biofuels and bioenergy for heat on track with the IEA's SDS, such policy support should link to demonstrating sustainability.**
- **The introduction of bioenergy sustainability frameworks in Asian markets that account for most medium term bioenergy growth is especially important.**
- **How can a balance be struck to ensure sustainability policies focus on fuels and feedstocks with potential sustainability implications, without unduly slowing deployment of low risk bioenergy?**
- **Bioenergy policy development must consider both potential sustainability risks and the wider benefits which can be achieved e.g. air quality, waste management, security of supply etc.**
- **The EU RED, and several other policies and initiatives, monitor and report on sustainability performance. However, governance frameworks need to cover a larger share of bioenergy use.**
- **The IEA is collaborating with key stakeholders for the development of sustainable bioenergy. Including: the Biofuture Platform, the IEA Bioenergy TCP, IRENA, GBEP, FAO, WBCSD and others.**

For further insights and analysis…

- Renewables 2018 Market Report
- World Energy Outlook (WEO) 2018
- Technology Roadmap - delivering sustainable bioenergy (free)
- How2Guide for Bioenergy (free)
- The Future of Trucks (free)

For more information see: www.iea.org/publications/

- Tracking clean energy progress:

www.iea.org/tcep/

- Aviation biofuels commentary:

https://www.iea.org/newsroom/news/2019/march/are-aviation-biofuels-ready-for-take-off.html