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# Making a Clean Future Real: How to Best Combine Gas and Renewables?

*World Climate Summit Workshop  
COP 22, Marrakech, Morocco  
12 November 2016*

*Jean-François Gagné  
Energy Technology Policy Division Head  
International Energy Agency*

**The IEA works around the world to support an accelerated clean energy transition that is**

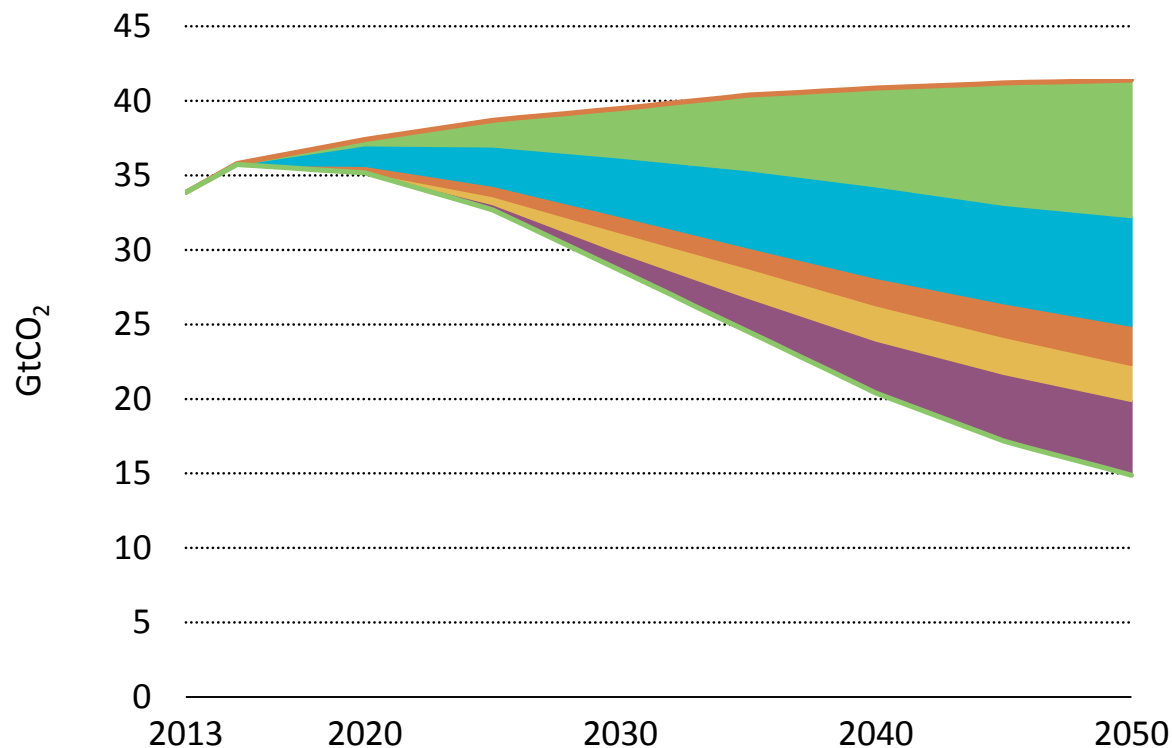
**enabled by real-world SOLUTIONS**

**supported by ANALYSIS**

**and built on DATA**

# Sizing the scale of the challenge... ... and its solutions ...

Contribution of technology area to global cumulative CO<sub>2</sub> reductions

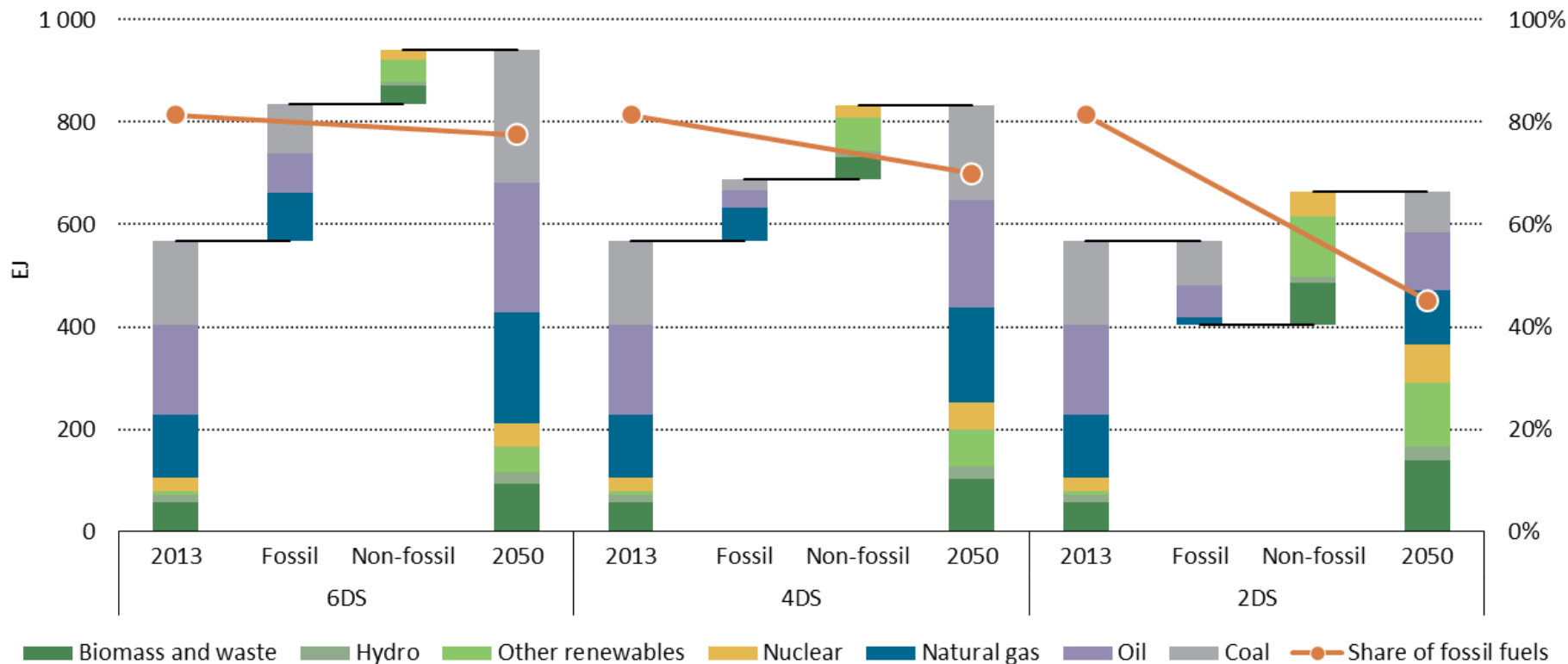


*The carbon intensity of the global economy can be cut by two-thirds through a diversified energy technology mix*

ETP  
2016

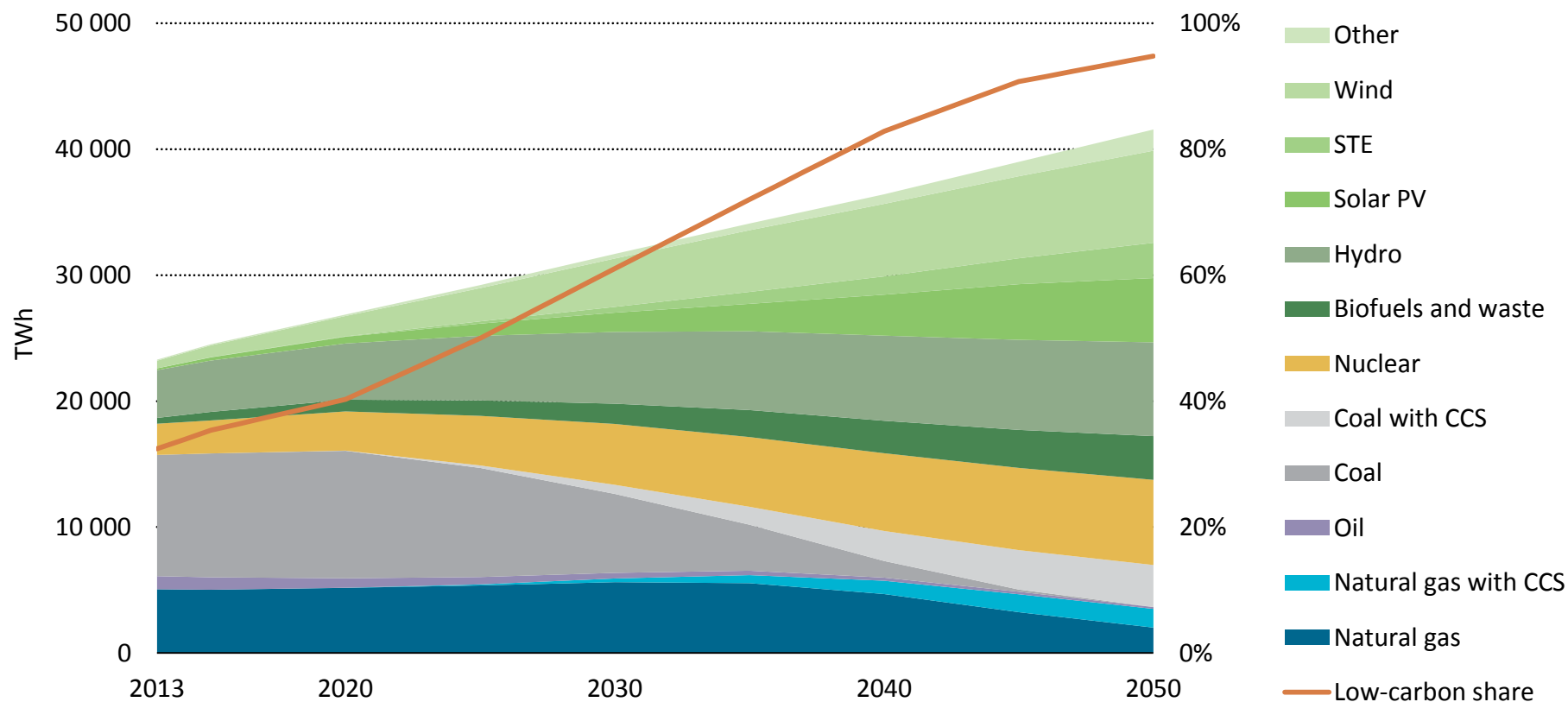
# ... looking at a multitude of sustainable energy options ...

Primary energy mix in the ETP scenarios



*Fossil fuels remain an important part of global energy supply in the 2DS with a 45% share in 2050*

# ... as well as how to implement them ...



## Generation today:

- Fossil fuels: 68%
- Renewables: 22%

## Generation 2DS 2050:

- Renewables: 67%
- Fossil fuels: 17%



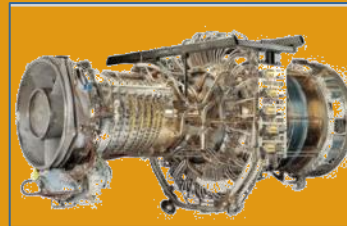
# ... through systemic analysis of options

Technology  
spread

Geographic  
spread

Design  
of power  
plants

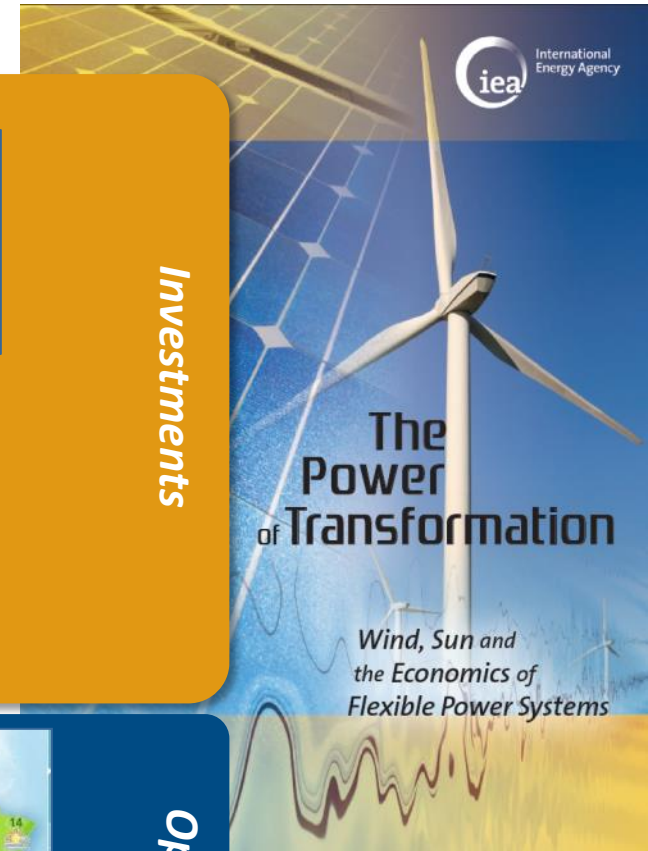
System  
friendly  
VRE



Investments

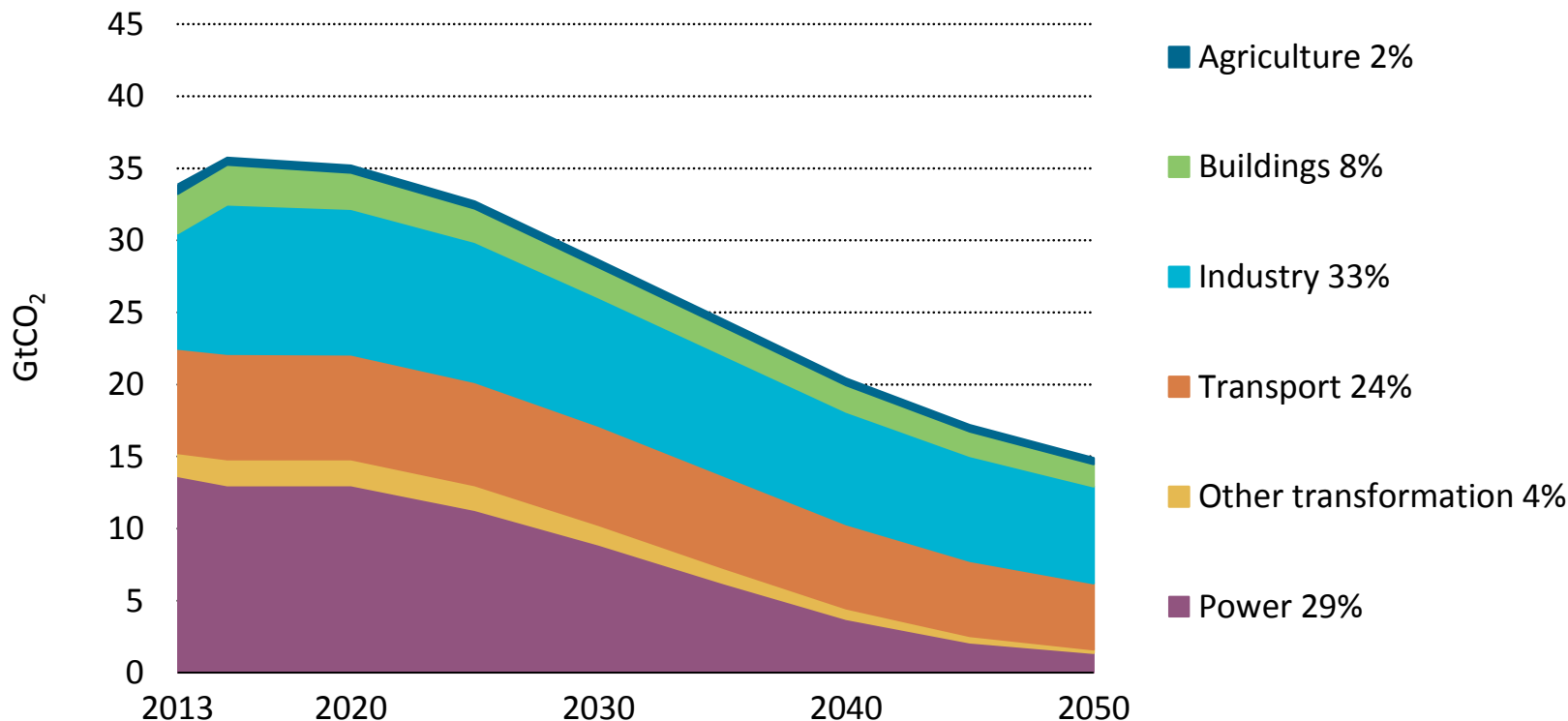


Operations



# But the challenge increases to get from 2 degrees to “well below” 2 degrees

Energy- and process-related CO<sub>2</sub> emissions by sector in the 2DS



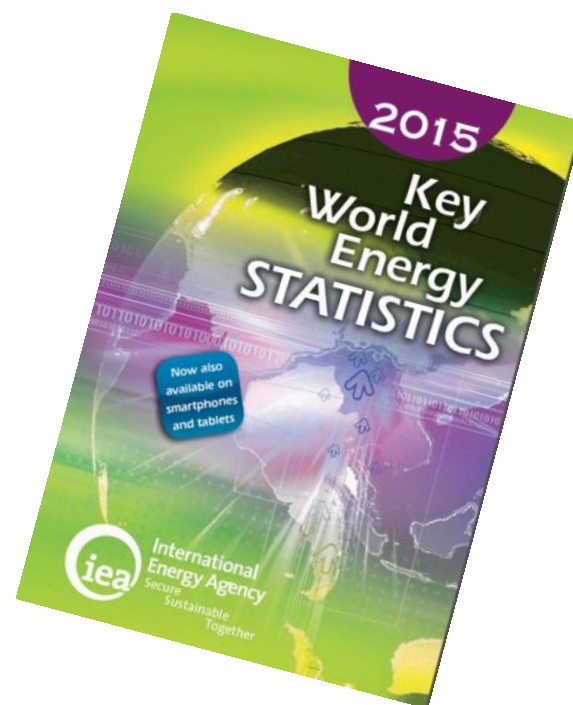
*Industry and transport account for 75% of the remaining emissions in the 2DS in 2050.*

# Thank you

## Explore the data behind *ETP*



[www.iea.org/etp](http://www.iea.org/etp)



[www.iea.org/statistics](http://www.iea.org/statistics)