

A landscape photograph showing a green field in the foreground, a line of trees in the middle ground, and a clear blue sky with a bright sun setting on the horizon. Several high-voltage power lines stretch across the sky from a pylon on the left towards the right. The sun is low on the horizon, creating a lens flare effect.

Renewables and the grid

Challenges in Electricity Decarbonisation, Paris, 8 Nov 2018

Craig Morris

RGI – a unique coalition of NGOs and TSOs

Focus of TSOs:

“We need to build up the power system without delay while minimising impacts on nature and people.”

Focus of NGOs:

“We need to grow renewable energy much faster to reach our climate targets while ensuring an environmentally sensitive development of the power system.”



“We promote transparent, environmentally sensitive grid development to enable further steady growth of renewable energy and the energy transition”

41% of all PCI EHV grid projects are delayed

27 PCIs (26%) encountered delay within a year and 15 PCIs (15%) were rescheduled.

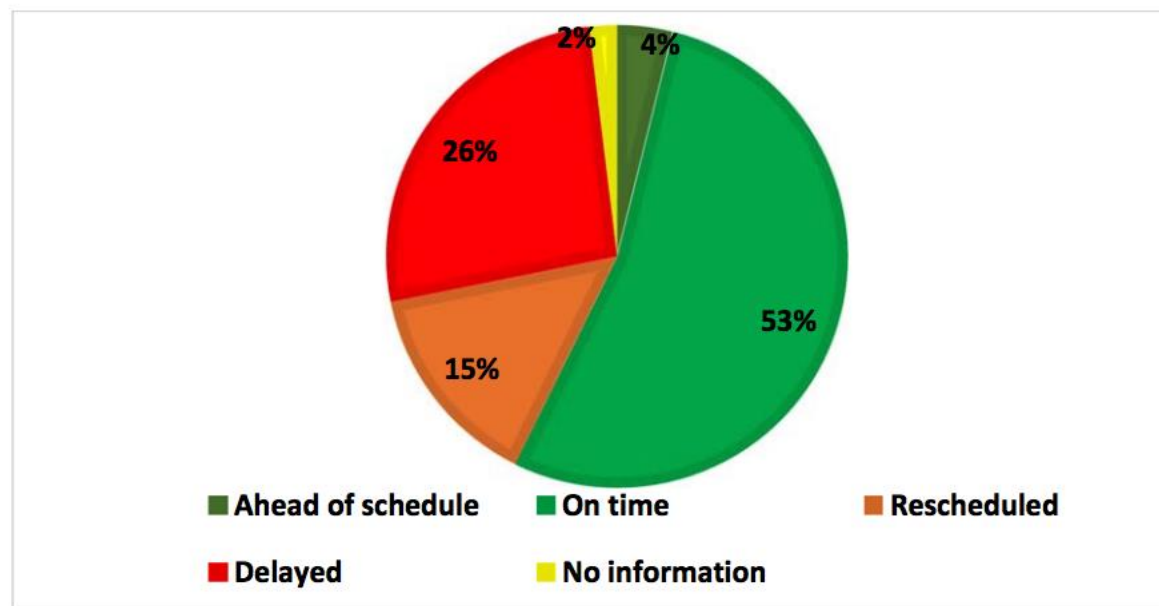


Figure 5 - Progress of electricity PCIs

What role
for gas,
what for
electricity?

(Who
knows?)

Norway's Newest Ships Give a Glimpse Into the Future of Sustainable Seafaring

The country is using oil and gas riches to engineer emission-free vessels



Norway's latest ships, including the passenger vessel *Future of the Fjords*, may portend the end of carbon-belching vessels. Of the 60 or so fully electric or hybrid vessels in operation globally, 40 percent are Norwegian. (Peter Tubaas/NCE Maritime CleanTech)

<https://www.smithsonianmag.com/innovation/norways-newest-ships-give-glimpse-into-future-of-sustainable-seafaring-180970326/>

TYNDP now written by ENTSO-E and ENTSO-G

Factor		2050 Scenario Overview				
Scenario		National Trends	Global Ambition	European Focus	Distributed Energy	Delayed Transition
Category	Criteria					
Primary mix	Coal	---	---	---	---	---
	Oil	--	---	--	---	-
	Nuclear	--	--	--	---	-
	Hydro	o	o	o	o	o
	Geothermal	o	+	o	++	o
	Biomass	+	+++	+	++	+
	Imported Green Gas	++	+++	+	+	+
	Natural gas	-	---	-	--	o
	Wind onshore	++	+++	++	+++	+
	Wind offshore	++	+++	++	++	+
	Solar	++	++	++	+++	+
	Imported Green Liquid Fuel	+	+	+	+	+
High temperature Heat	Total demand (all energy)	o	-	o	-	o
	Electricity Demand	+	+	+	++	+
	Gas Demand	+	++	+	o	+
Low temperature Heat	Total demand (all energy)	-	---	-	--	o
	Electricity Demand	+	++	+	+++	+
	Gas Demand	-	-	-	--	o
Transport	Total demand	-	---	--	--	-
	Electricity Demand	+	++	++	+++	+
	Gas Demand	+	++	++	+	+
Power and Lighting	Electricity Demand	o	-	o	-	o

Domestic gas production near zero by 2030

Hulp warmtetransitie



Samen bouwen aan een gebouwde omgeving zonder aardgas, oftewel de warmtetransitie, is een grote en complexe opgave. Liander helpt u daarbij.

Conclusions

- In EU, well developed grid will enable electrification
- Failure to mitigate only leads to (greater) adaptation costs
- Better option: Work with us to be better prepared

**Thanks for
listening!**

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