
SEERMAP

South-East Europe Electricity Roadmap

Scenario definition in SEERMAP

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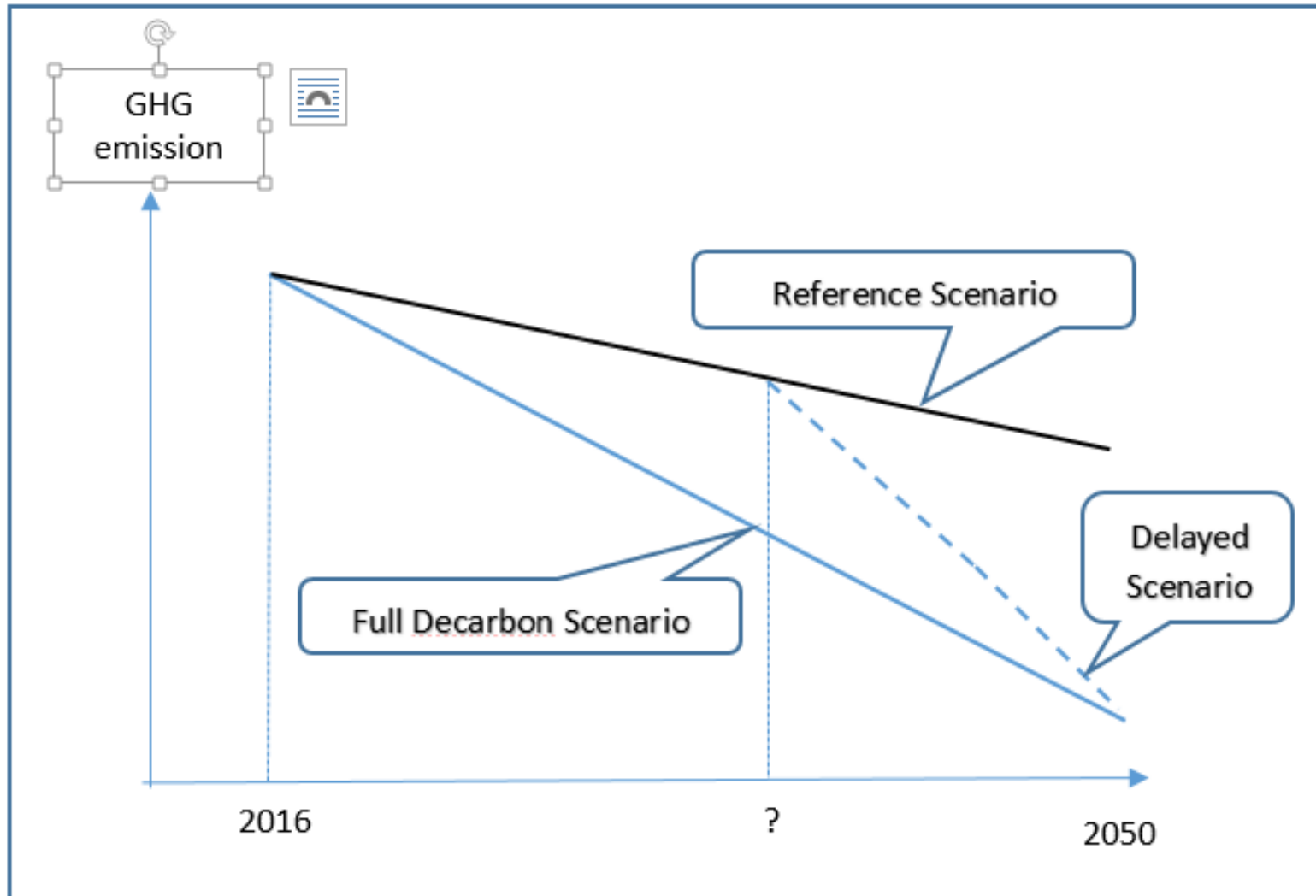
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- Main scenarios
- Scenario assumptions
- Sensitivity assessment

- Three main scenarios are defined: a Reference scenario, a Full decarbonisation scenario, and a Delayed decarbonisation scenario
- These different scenarios share a common GDP assumption as well as assumptions regarding the carbon price, fuel prices and costs of technologies and electricity demand. This makes the scenarios more comparable.
- Some of these elements will be checked in sensitivity scenarios: demand, carbon price, technology and gas infrastructure development.

Main scenarios



- Current energy investment patterns are prolonged
- Planned fossil based generation currently appearing in strategic documents (mainly lignite and coal) will be built.
- It assumes no decarbonisation and RES targets for 2050.
- It is characterised by an ETS carbon price for the SEE region between 30 €/t in 2030 and 100 €/t in 2050.
- RES-E deployment will follow a reference pathway in accordance with the latest PRIMES reference scenario (if not available according to 2020 NREAPs).
- The RES pathway for the period post-2020 will assume a phase-out of dedicated RES support in accordance with the conceptual framework used in the PRIMES reference scenario.

Full Decarbonisation scenario

- It assumes that only those new lignite/coal plants are built in the region, where a Final Investment Decision (FID)
- Modelling will assume a weighted carbon target, with SEE reaching 93% decarbonisation, and the EU reaching 99% by 2050.
- The EU ETS carbon value will be introduced in the SEE region post-2020 as in the reference scenario.
- RES-E deployment will be stronger in the scenario in order to ensure that the decarbonisation target is reached.
- The decarbonisation is driven by the carbon price and by gap-filling measures for RES.

Delayed Decarbonisation scenario

- This scenario will show the consequences of a delayed shift from a reference path towards full decarbonisation.
- The assumptions that current energy investment patterns are prolonged in the near to mid future, in a similar way to the reference scenario, including the construction of all planned lignite/coal plants.
- However, at a certain point in time (e.g. by 2030, this is to be agreed), a paradigm shift is assumed across the SEE region.
- A more intensive RES deployment will be needed to reach the decarbonisation target than in the full decarbonisation scenario.
- The scenario will allow us to demonstrate the differences in the costs, if this type of strategy is followed.

Assumptions 1

	GHG emission reduction target		CO2 price		
	SEE	EU3	data source	SEE	EU3
Reference	no target	no target	from PRIMES (100€/tCO ₂ by 2050)	from 2030	from 2016
Delayed	one common target which will be reached		from PRIMES (100€/tCO ₂ by 2050)	from 2030	from 2016
Full decarbon	one common target which will be reached		from PRIMES (100€/tCO ₂ by 2050)	from 2020	from 2016

Assumptions 2

	New fossil plant		RES	
	SEE	EU3	SEE	EU3
Reference	national plan until 2030	national plan until 2030	NREAP, or PRIMES ref	PRIMES REF
Delayed	national plan until 2030	national plan until 2030	NREAP or PRIMES ref by 2030 after join to the EU gap filling	gap filling
Full decarbon	FID (2016 state)	FID (2016 state)	gap filling	

- **Demand:** the role of distributed generation, electric mobility and energy efficiency measures must be assessed by assessing lower and higher demand scenarios than the PRIMES reference scenario;
- **Gas infrastructure development:** assessing the impacts of a weaker or a stronger infrastructure development and lower or higher gas price;
- **Technology cost development** (CCS, storage and RES): revision of new developments compared to the 2011 EU roadmap, and check if cost projections have changed significantly since 2011;
- **Carbon price:** In addition to the carbon price assumed in the PRIMES reference scenario, a lower and higher carbon price will also be included in the sensitivity analysis
- Other: WACC, Regionalisation?

Thank you for your attention!

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