

German GHG Quota in the Transport Sector

Certificate trading as a promising business model?

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On behalf of:



Federal Ministry
for Digital
and Transport

Motivation

German GHG Quota in the Transport Sector

Emissions must be reduced to meet the climate target.

Several renewable options are available.

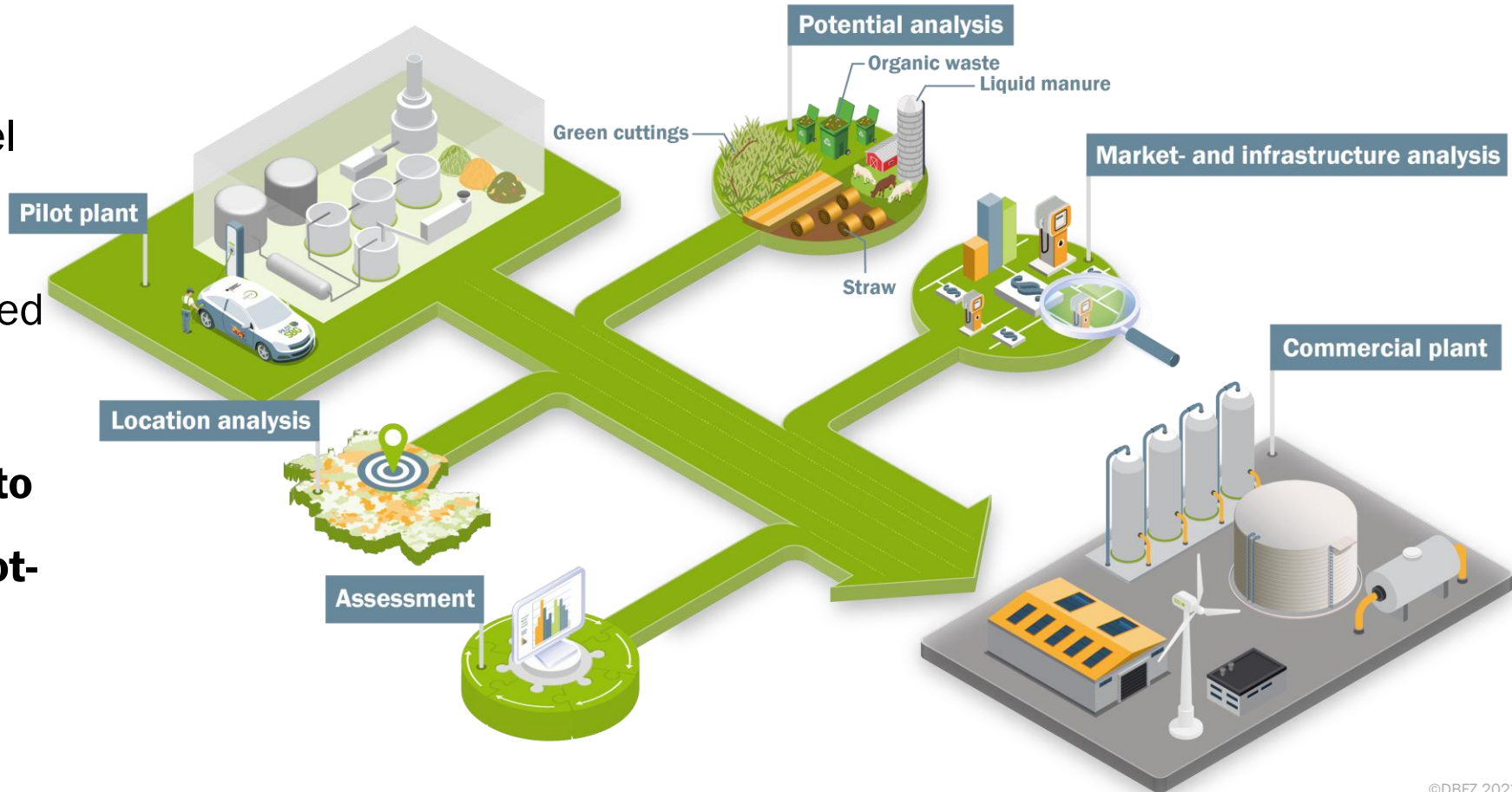
The structure of the incentive scheme in Germany is complex.

Certificate trading as a promising business model

The greenhouse gas quota can have a strong impact on the market.

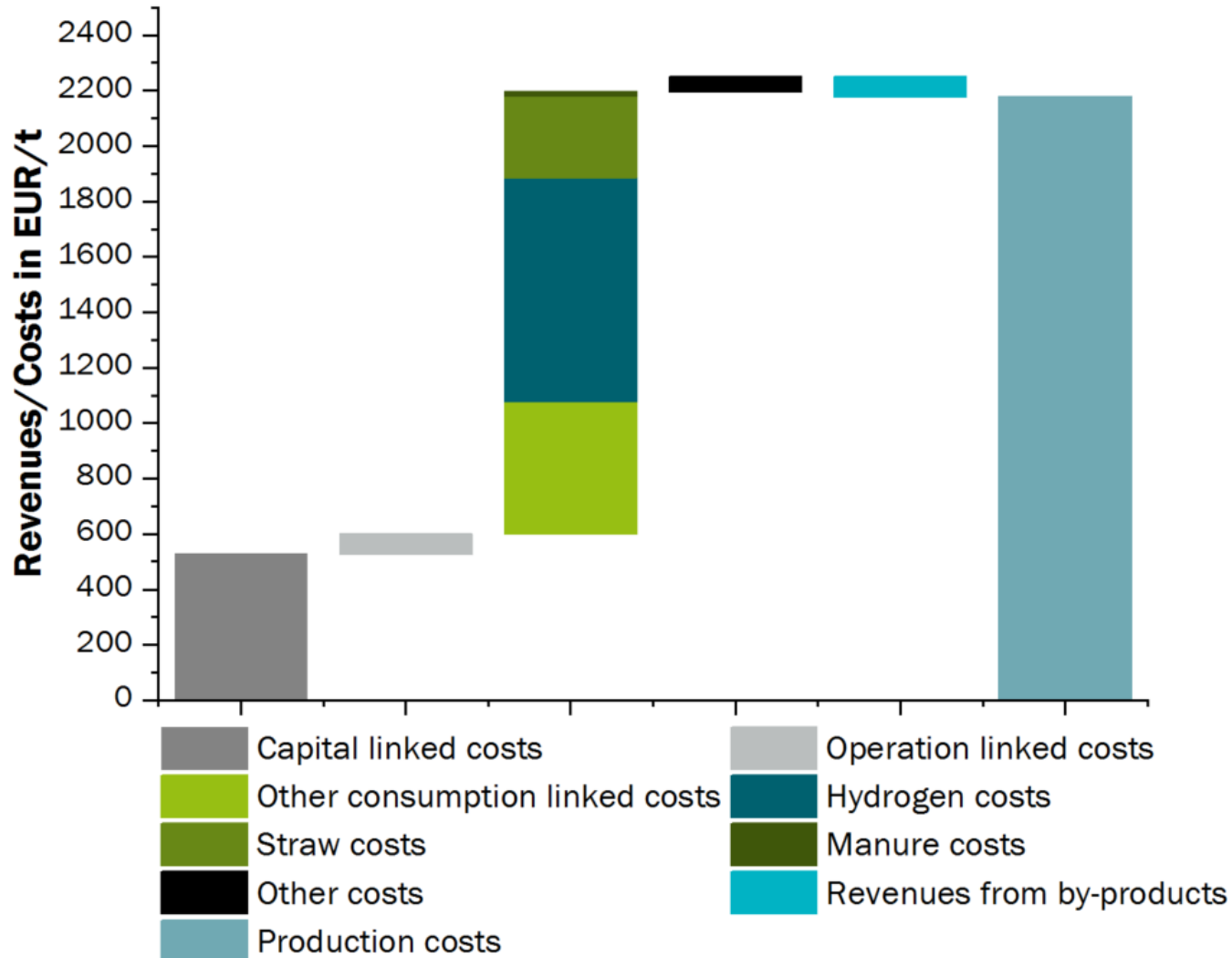
Pilot plant Pilot-SBG

- Climate-friendly renewable methane as a transport fuel
- Utilization of residues and waste materials for advanced fuel production
- **Analysis and assessment to evaluate process from Pilot-plant to commercial plant**



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Pilot-SBG - Production costs



- Production costs approx. 2,200 EUR/t
- Methane reference price 2,300 - 2,500 EUR/t
- Small gap between costs and revenues
- **Additional revenue from GHG quota required**
- Price information very unsecure
- **Therefore modelling GHG quota**



Regulatory

Renewable Energy Directive in Germany through **GHG quota**
Sub-quota for advanced biofuels.
Limitation or double counting of options.

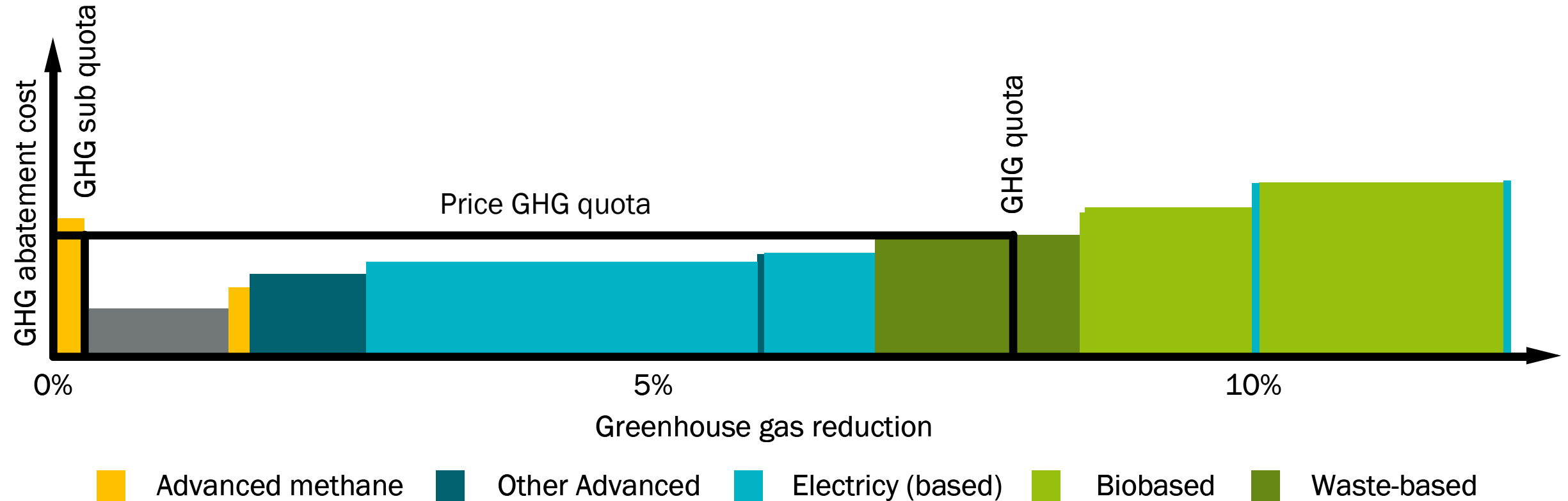


Model

GHG reductions: emissions to a reference value
GHG abatement costs are determined by production facilities
Capacities are determined
The resulting mix of the **quota needs to be modelled.**

Merit order as a modelling approach

- Marginal cost curve as a graded function of offers, called merit order.
- Merit order is suitable for reproducing the competitive situation in the quota.

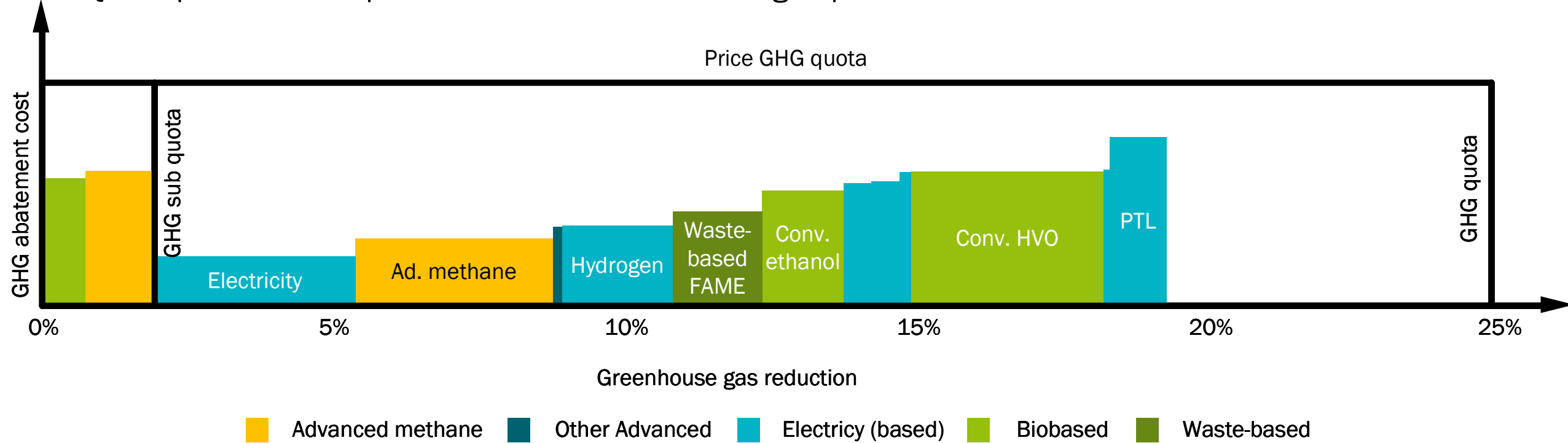


Modelled scenario 2023, base UBA Rescue

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Reference scenario 2030 results

- Reference Scenario: Constant level of traffic, no additional ramp-up of progressive options
- All required and permitted options fulfil the quota
- Quota price will be up to the maximum if not enough options are available.

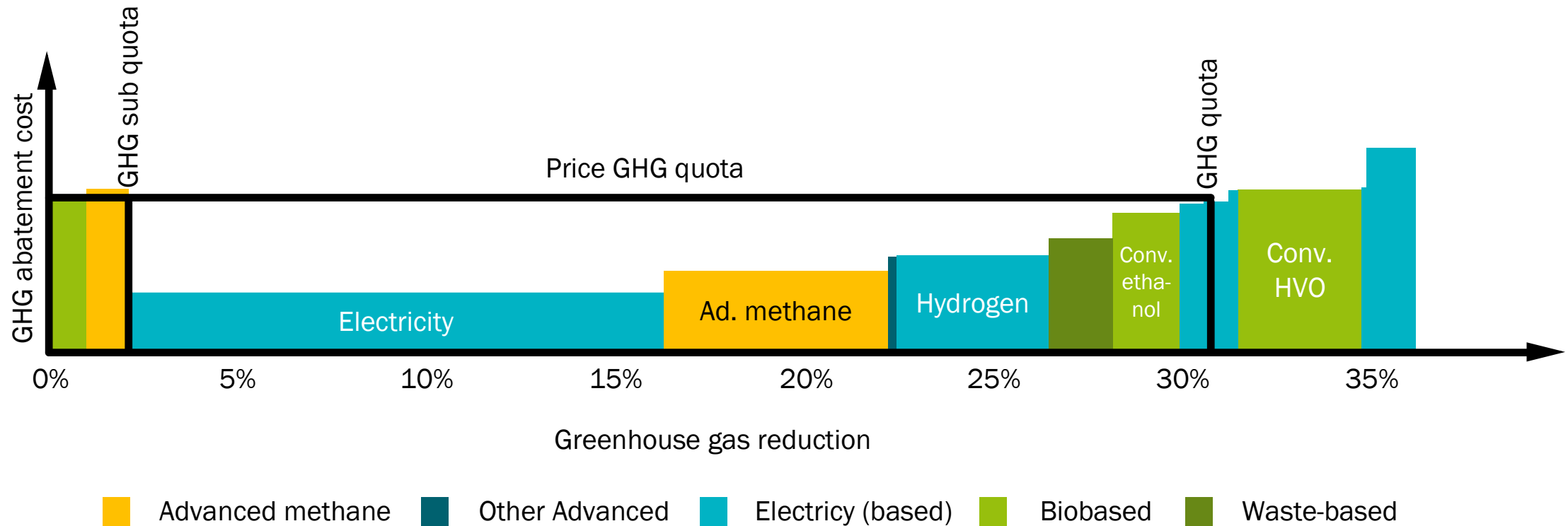


Modelled scenario 2030, extrapolations based on trends

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Mitigation scenario 2030 results

- Climate protection scenario: Significant traffic reduction, additional advanced options,
- Advanced biomethane, as produced in Pilot-SBG, finds its place also in this scenario.



Modelled scenario 2030, base DENA Leitstudie

Main influencing parameters:

- General traffic development
- Availability of individual production technologies
- Expansion of E-mobility and its infrastructure
- Legal adjustments to the quota

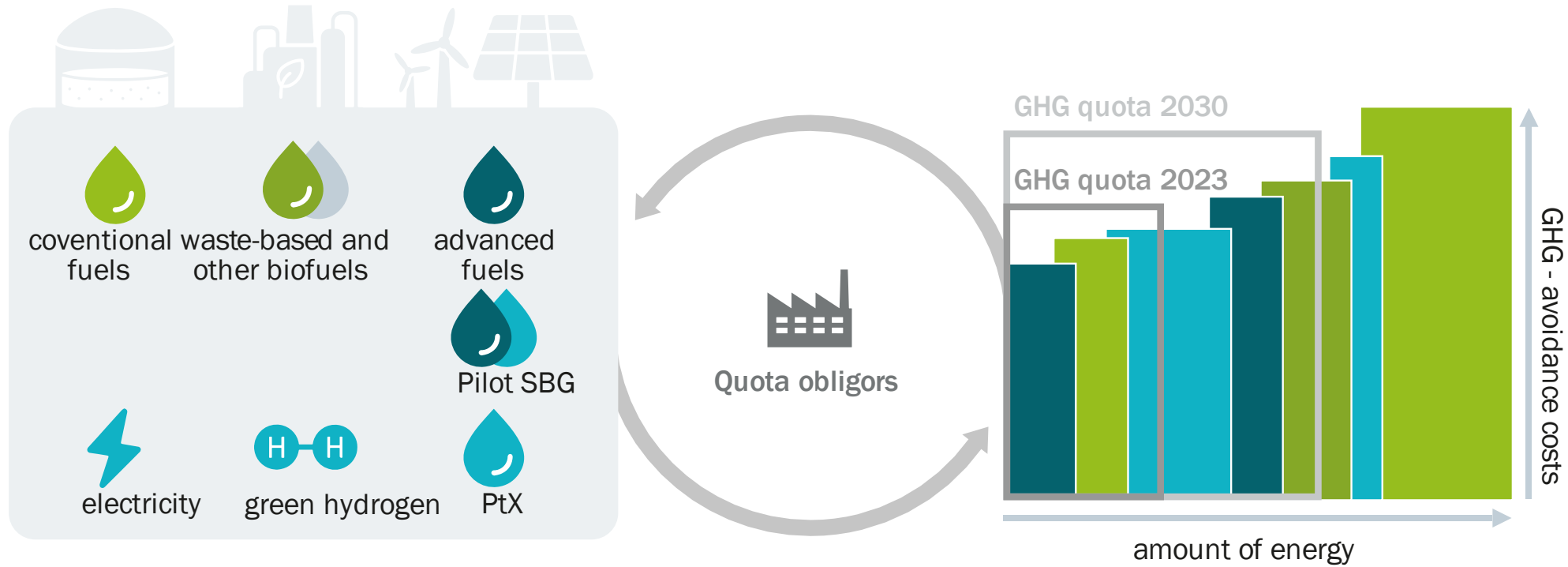


Modelling is possible
Price information can be calculated
Advanced biomethane is always competitive and can contribute within the modelled sub-quota

Highly dependent on transport trends
Assumptions regarding capacity expansion of renewable options required
Uncertainty of the policy framework

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Summary and outlook



Scenarios for the development of the transport sector can be evaluated

Assessing the risk of renewable fuel options help develop further investments

GHG quota price framework and the market can be modelled

Could evaluate future changes in the policy framework

Interested?
Get in touch with me!

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