A Solution to Motivate Investment in ***Advanced Sustainable Fuel*** production. A Swedish Perspective

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Ingvar Landälv
Fuels & Energy Consulting

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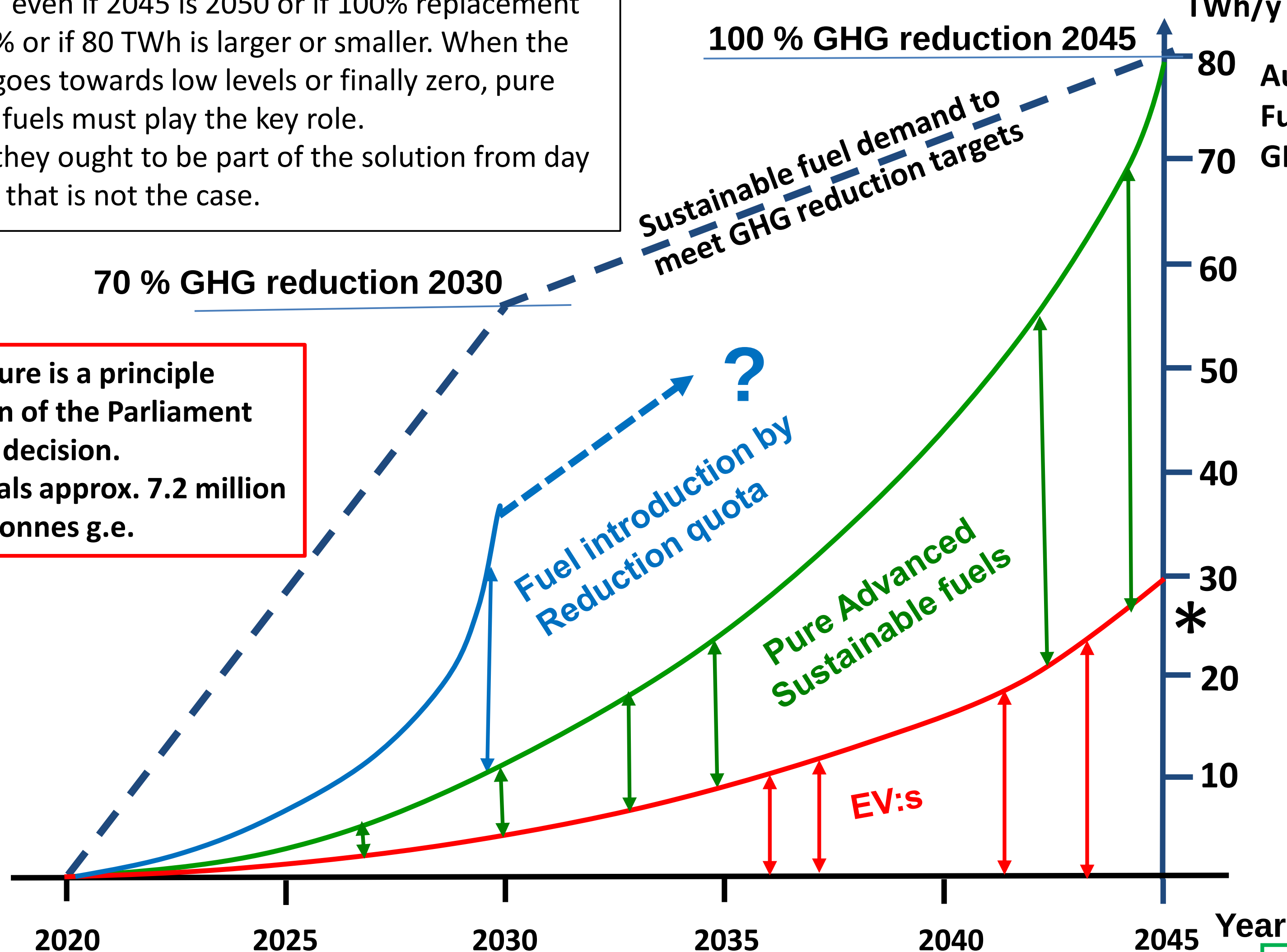
Fuels & Energy Consulting

The Task

Swedish Parliament decision 2017 to phase out fossil fuels to 2045 + What type of fuels to produce to accomplish it

The diagram can be looked at as generic. It would look "the same" even if 2045 is 2050 or if 100% replacement is 85 or 90% or if 80 TWh is larger or smaller. When the fossil part goes towards low levels or finally zero, pure renewable fuels must play the key role.
Therefore they ought to be part of the solution from day one. Today that is not the case.

The figure is a principle illustration of the Parliament decision.
80 TWh equals approx. 7.2 million tonnes g.e.



* Electricity for EV multiplied with 2.5 to approximately correspond to liquid fuels

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Comments to previous picture illustrating how fossil fuels are expected to be faced out to year 2045

- Swedish Parliament Climate Law decision taken June 2017
- Support structure for introduction of EV:s taken 2018
- Decision regarding gradual increase of reduction quota for fossil green house gas emissions taken 2018
- The reduction quota to be fulfilled by the fuel distributor. A non-fulfillment leads to penalties.
- In practice "Reduction quota" leads to that distributors buy cheapest material on the World market. Therefore about 85% of renewable components in the Swedish fuels are imported.
- Today about 20% of the Swedish fuels are renewables on an energy basis.
- To enable domestic production of renewable fuels a reduction quota system is not sufficient. A long term legislation is necessary.

CFD: One potential tool to overcome the risk relating to variations and changes in the market and in the legislation.

(Note: There are other tools which can mitigate the mentioned risks but here the CFD tool is briefly presented)

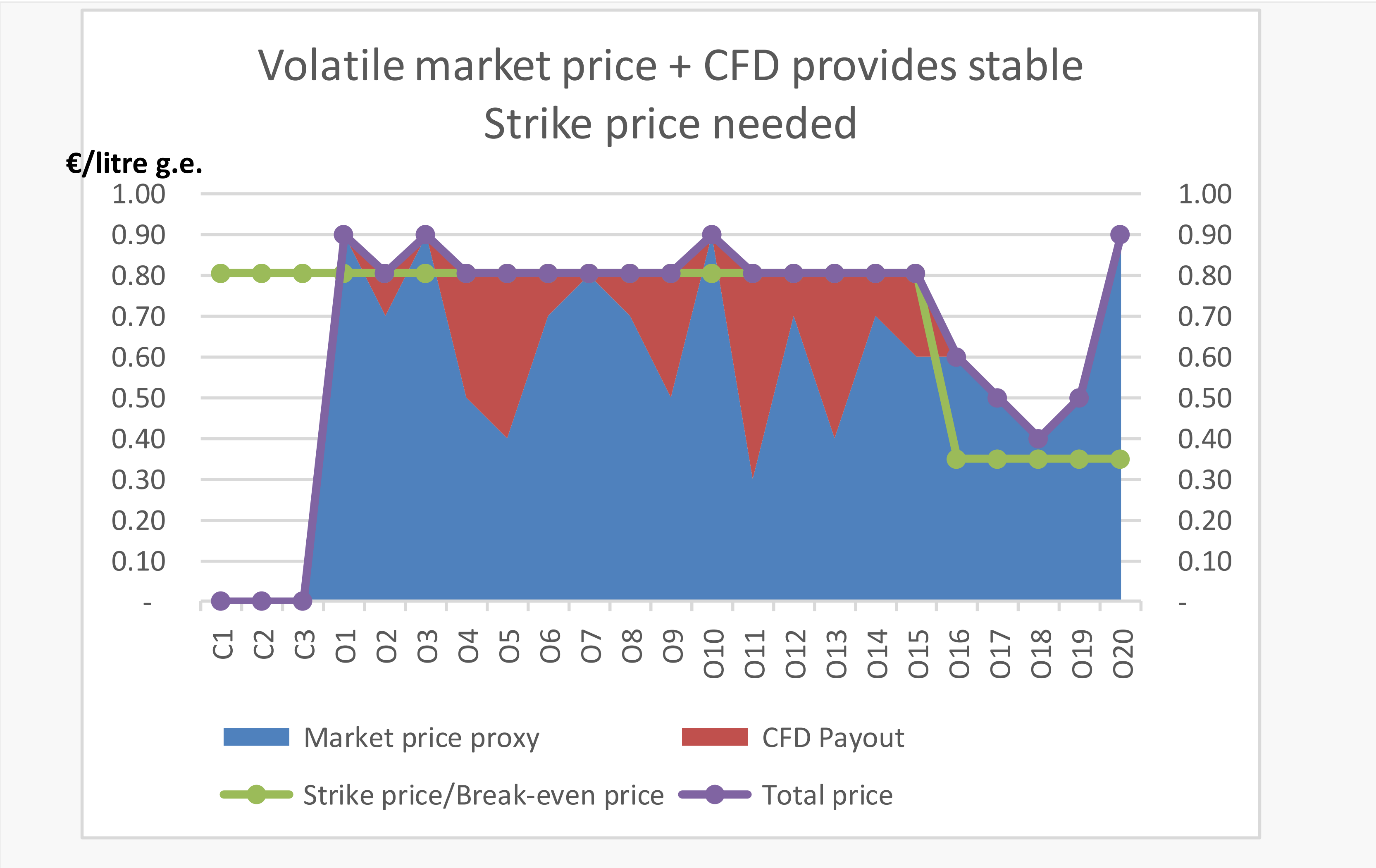
CFD, Contract For Difference, is a proven instrument, which gives predictability needed for the projects required price. Page 1(2)

- Civil law contract between the project company and a counterparty
- Pays out to the project company the difference between a market price and required price(strike price) during say 15 years (may vary)
- Proven instrument to motivate massive investment in renewables, e.g., off-shore wind, solar
- Awarded through yearly reverse auctions in pre-set categories, lowest-cost bid wins. This minimizes cost to the consumer and solves competition issues.
- Categories define sustainability criteria, route and energy volumes for each year's auction and category

CFD, Contract For Difference, is a proven instrument, which gives predictability needed for the projects required price. Page 2(2)

- Full control of cost to the consumer. Auctions held yearly and with decreasing maximum administrative strike prices.
- Administered by a competent and credit-worthy Government counter party. This is the projects' counterparty to the CFD.
- However, cost of CFD payouts can be allocated either to the fuel pool or through tax.
- After the CFD period capital costs should have been payed off. Production cost can then be expected to compete on the market without further support and the plant will continue to produce renewable fuels.

An *Advanced Sustainable Fuel* production project becomes financeable with a CFD (An illustrative example)



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