

Build-up of the Decision Support Tool

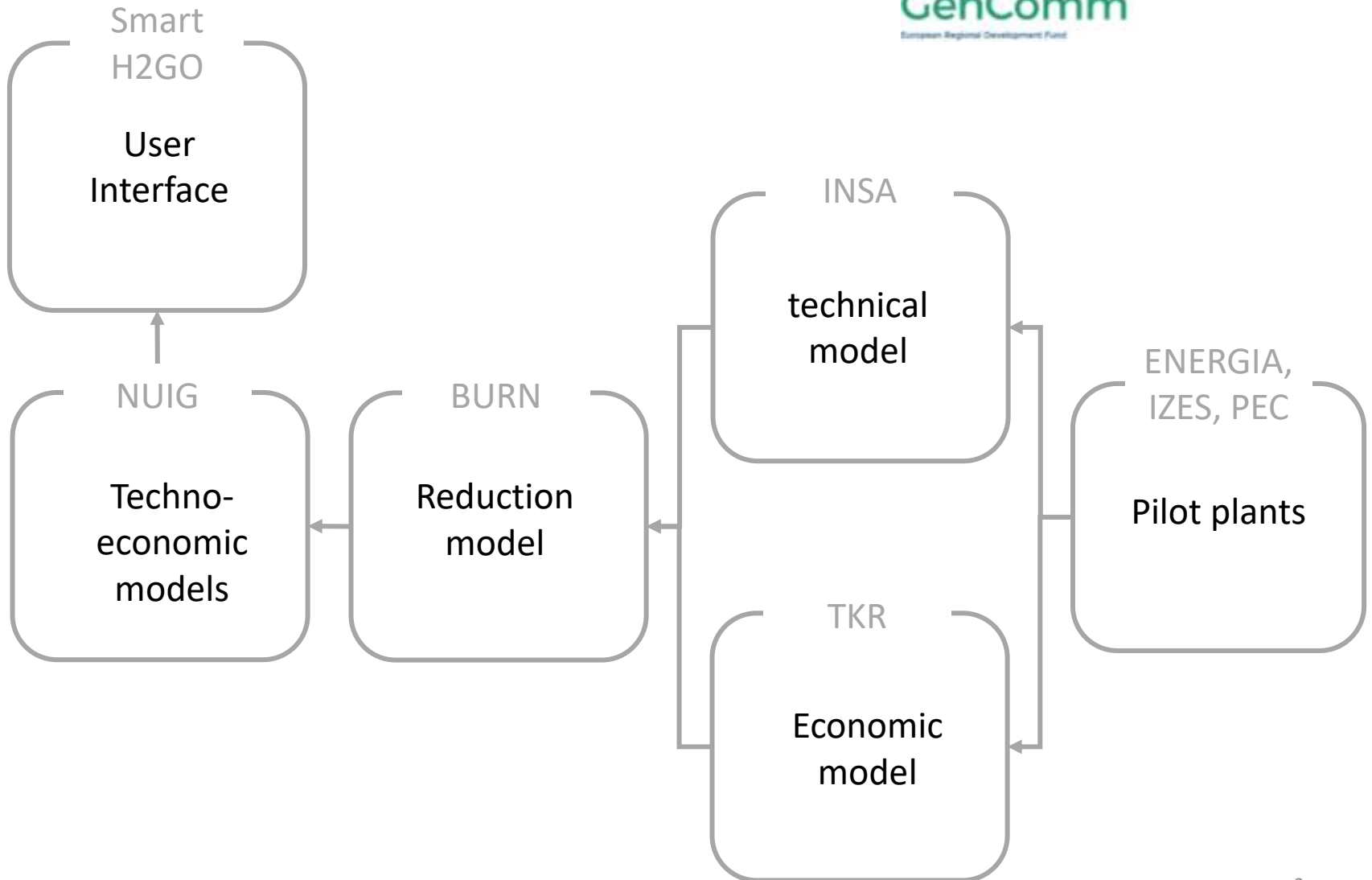
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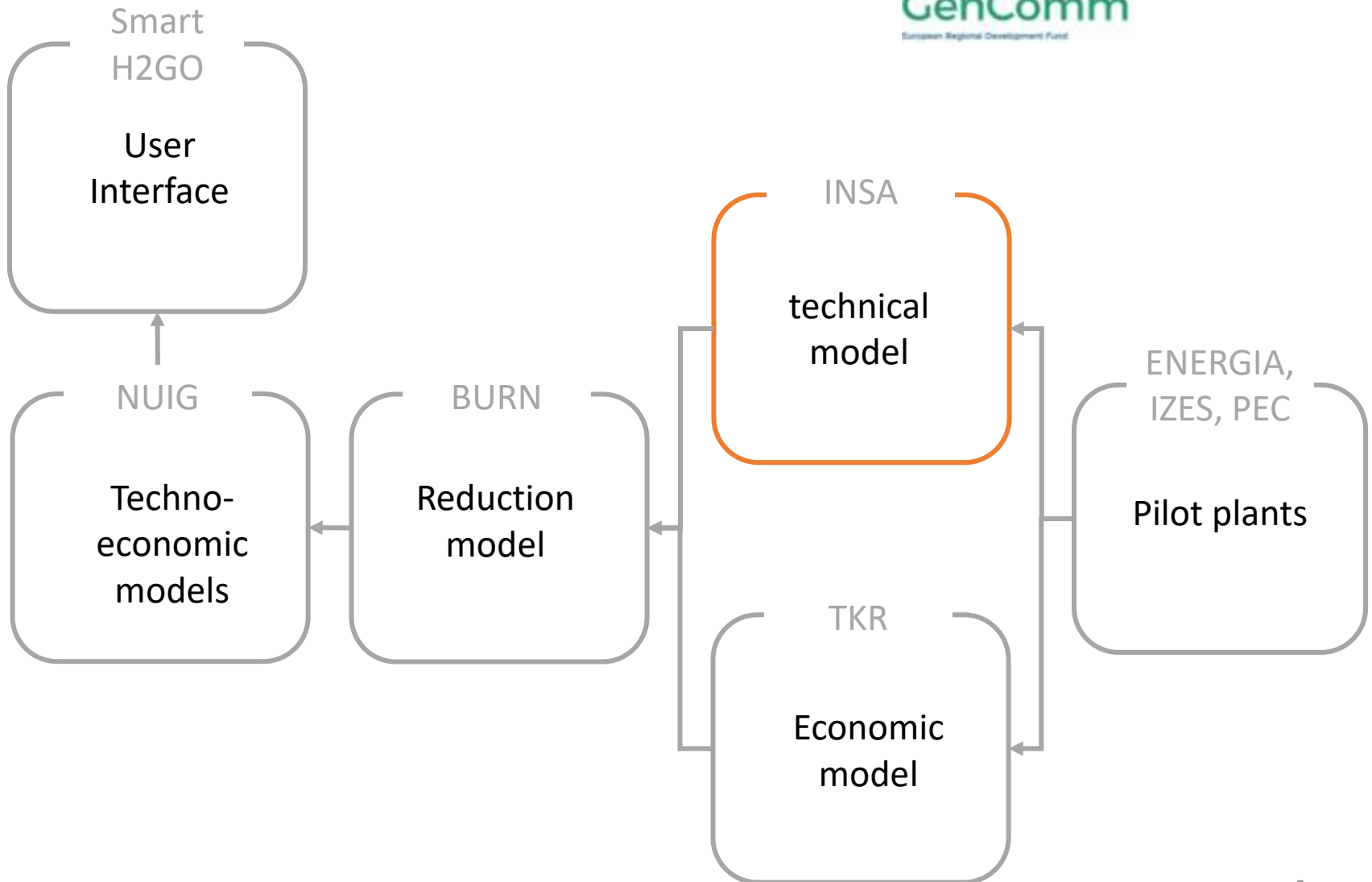
Arya Gunawan
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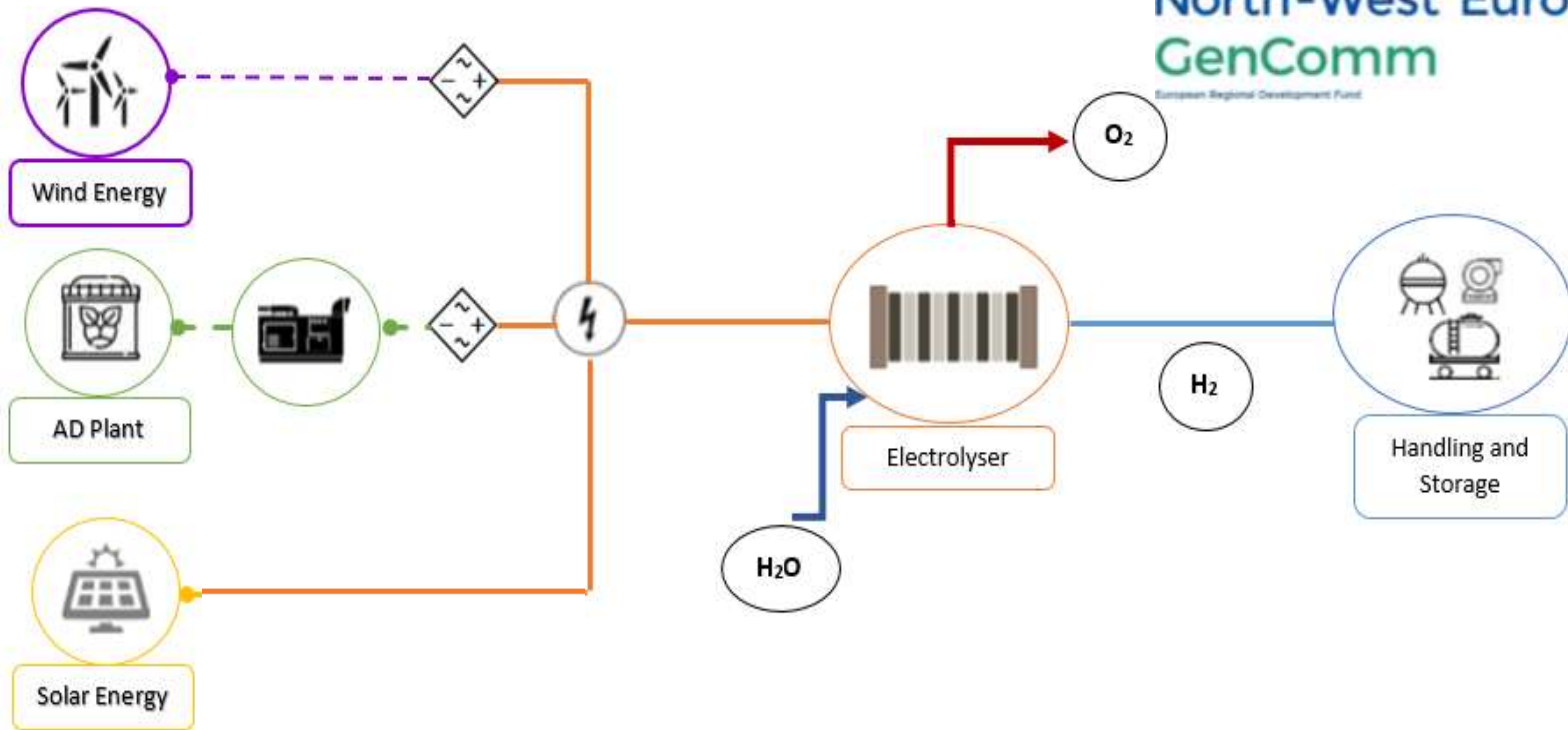


Building DST



Building DST





Input:

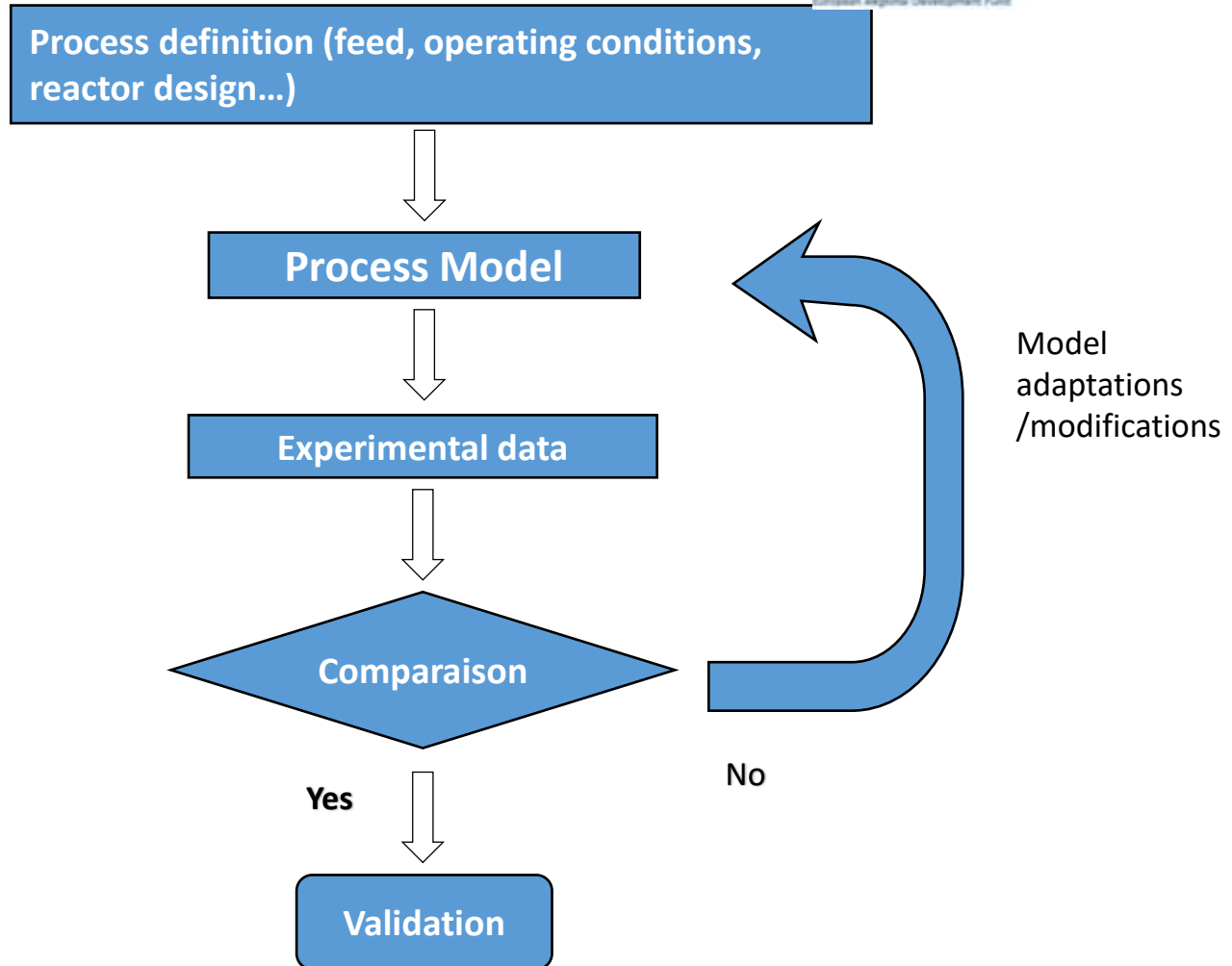
- Technical parameters of the technology used
- Geographical information



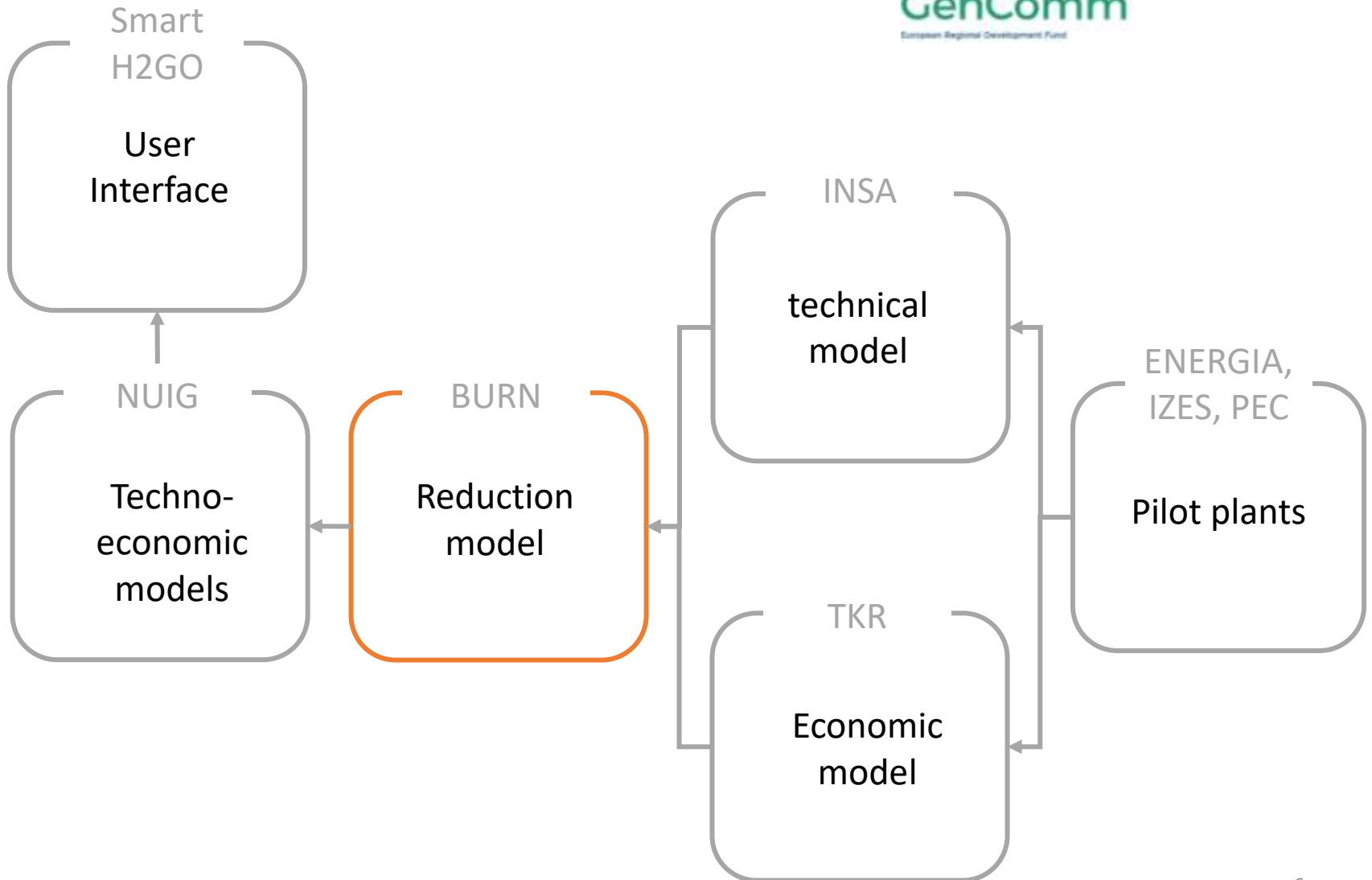
Final result:

Potential of H2 production and specifications

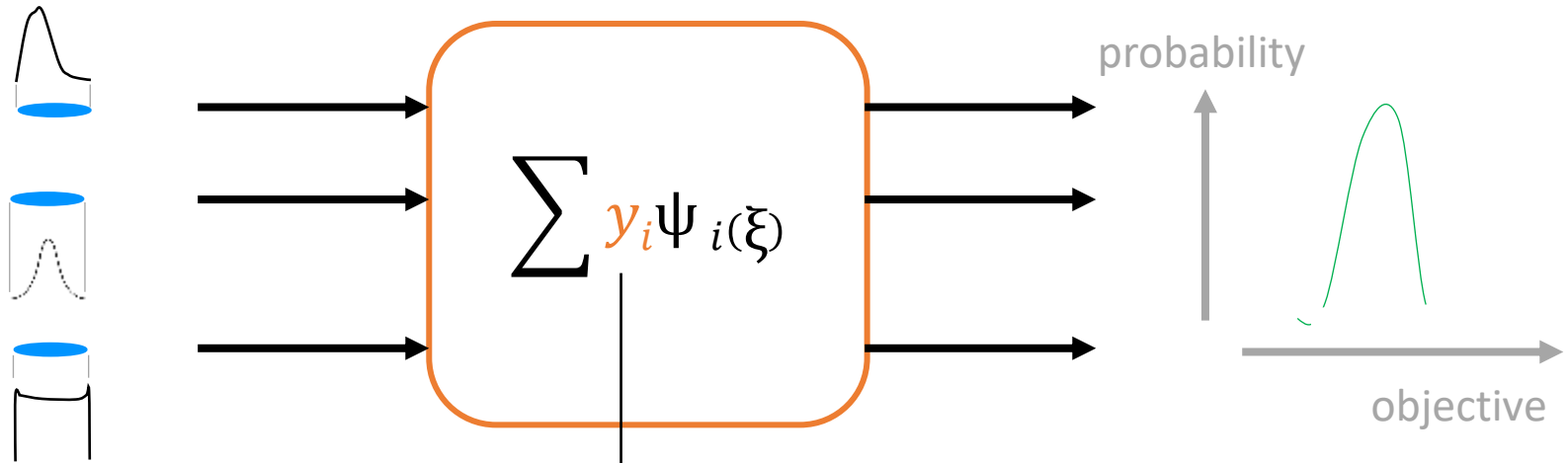
Building a technical model



Building DST

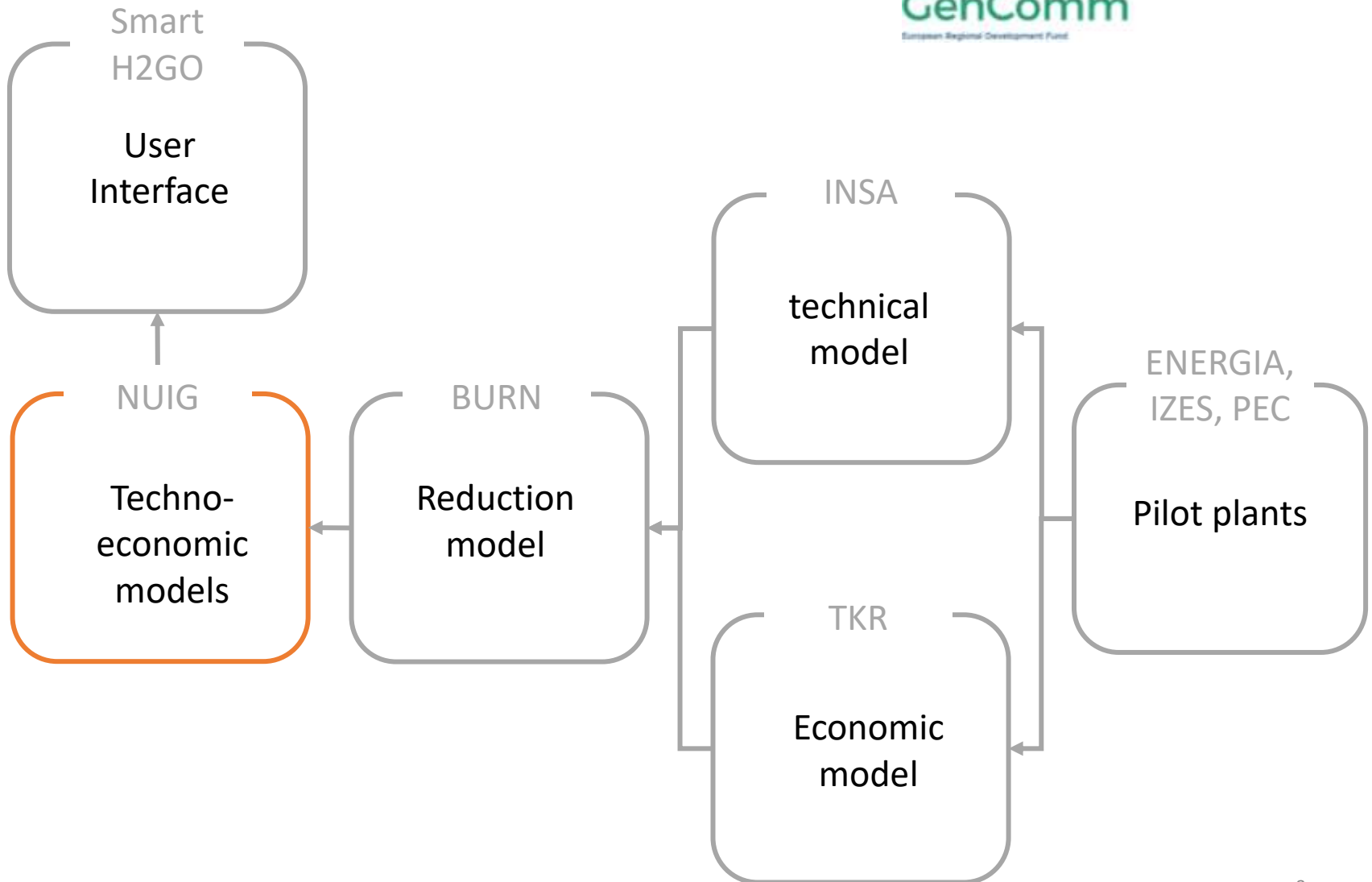


Reduction model by BURN



$$\sum y_0 = \text{mean}$$
$$\sum_{i \neq 0} y_i^2 = \text{variance}$$

Building DST



Techno-economic model by NUIG

wind curtailment, E_{DD} (%)

capacity factor, CF_{WF} (%)

wind farm capacity, CP_{WF} (MW)

Input from users

Wind curtailment volume (MWh)

Techno-economic parameters
 Lifetime : 20 years
 Stack replacement : 5 years
 Discount rate : 6%
 Power cost : 1.7 €/kg
 Min power (MP) : 5% ES(n)
 Comp. el. Cons. : 1.7 kWh/kg
 Av. electricity price : 0.1263 €/kWh
 Water consumption : 15L/ kg_{H2}
 Water price : 2.38 €/m³

Hydrogen production (kg/y)

Optimum electrolyser size (MW)

Technical model

Required water (kg/y)

Required electricity from the grid (MWh)

CAPEX (€)

Fixed OPEX (€)

Variable OPEX (€)

Economic model

LCOH (€/kg)

Travel cost (€)

Location & routes by GIS

Transport model

LCOH after transport (€/kg)

Q & A



Thank you for your attention