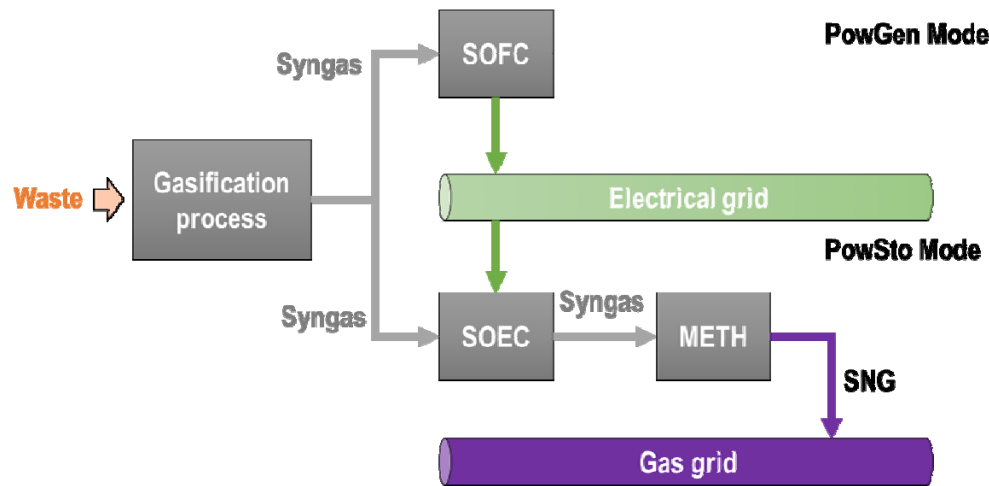


Waste2GridS: Converting WASTE to offer flexible GRID balancing Services with highly-integrated, efficient solid-oxide plants

To identify the most promising industrial pathways of waste-based solid-oxide plants for grid-balancing service.



- ✓ In the periods with **low generation of renewable power**, the syngas is used in the **SOFC mode** of operation of the reversible solid oxide cell (SORC) for power generation (PowGen), and the **net power** produced is delivered into the power grid.
- ✓ In the periods with **excess renewable power**, the syngas composition is adjusted via the electrolysis **SOEC mode** of operation of the SORC (PowSto). The resulting syngas is used to synthesize **methane (SNG)**, which can be readily injected into the natural-gas.



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RES-dominated power generation zones

(solid lines: electricity transmission or distribution lines)

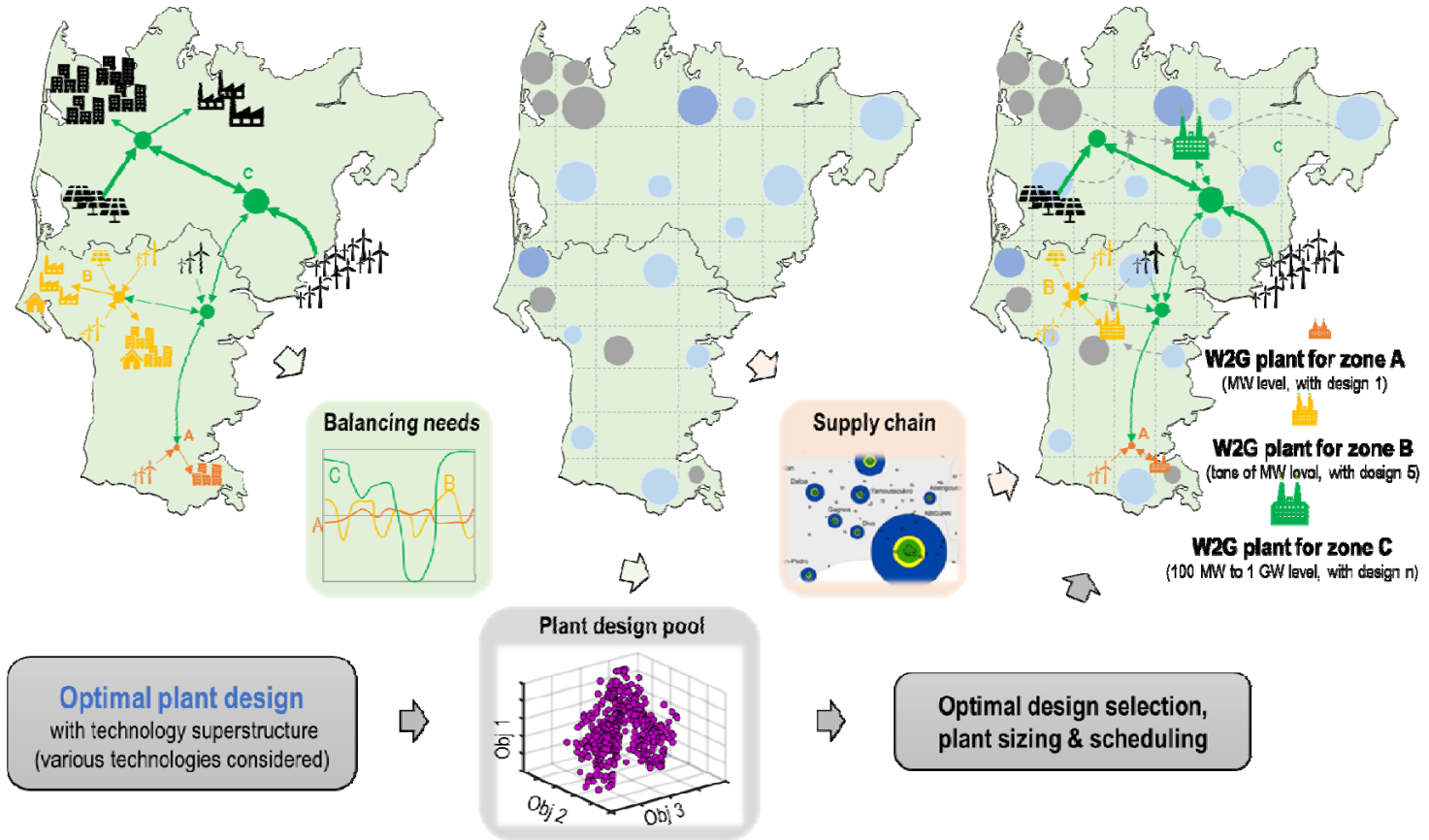
Waste availability

(grey: MSW; blue: commercial; light blue: agri&forest)

Case studies

(grey dashed curves: waste supply)

1. Identify vRES-dominated zones.
2. Identify local biomass waste availability.
3. Optimize plant designs.
4. Select and size plant with optimal scheduling to best handle the balancing needs.
5. Generate and evaluate specific case studies with feasible waste supply chain.



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