CONSOLINNO energy

Design of an energy system for a district with oemof-solph

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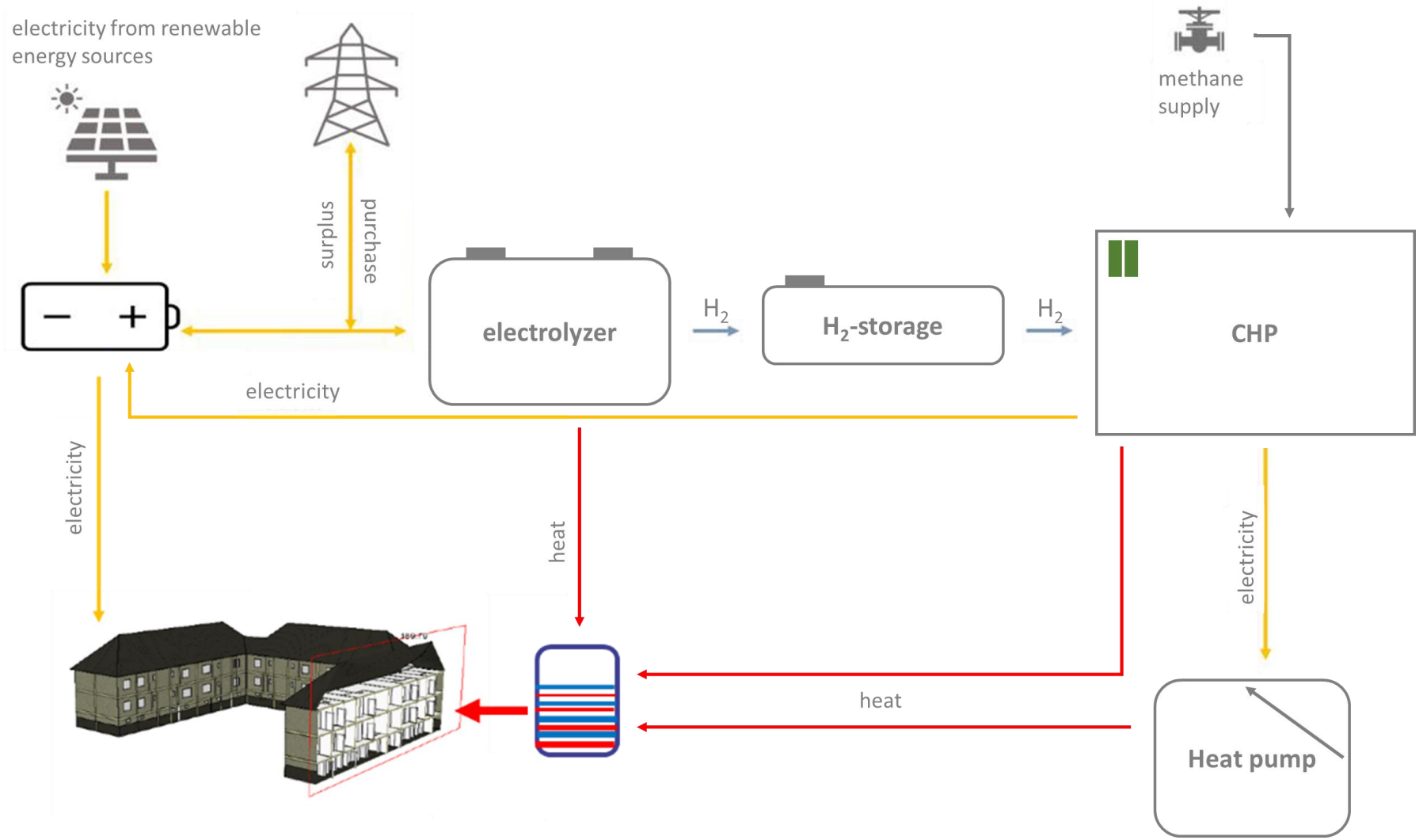

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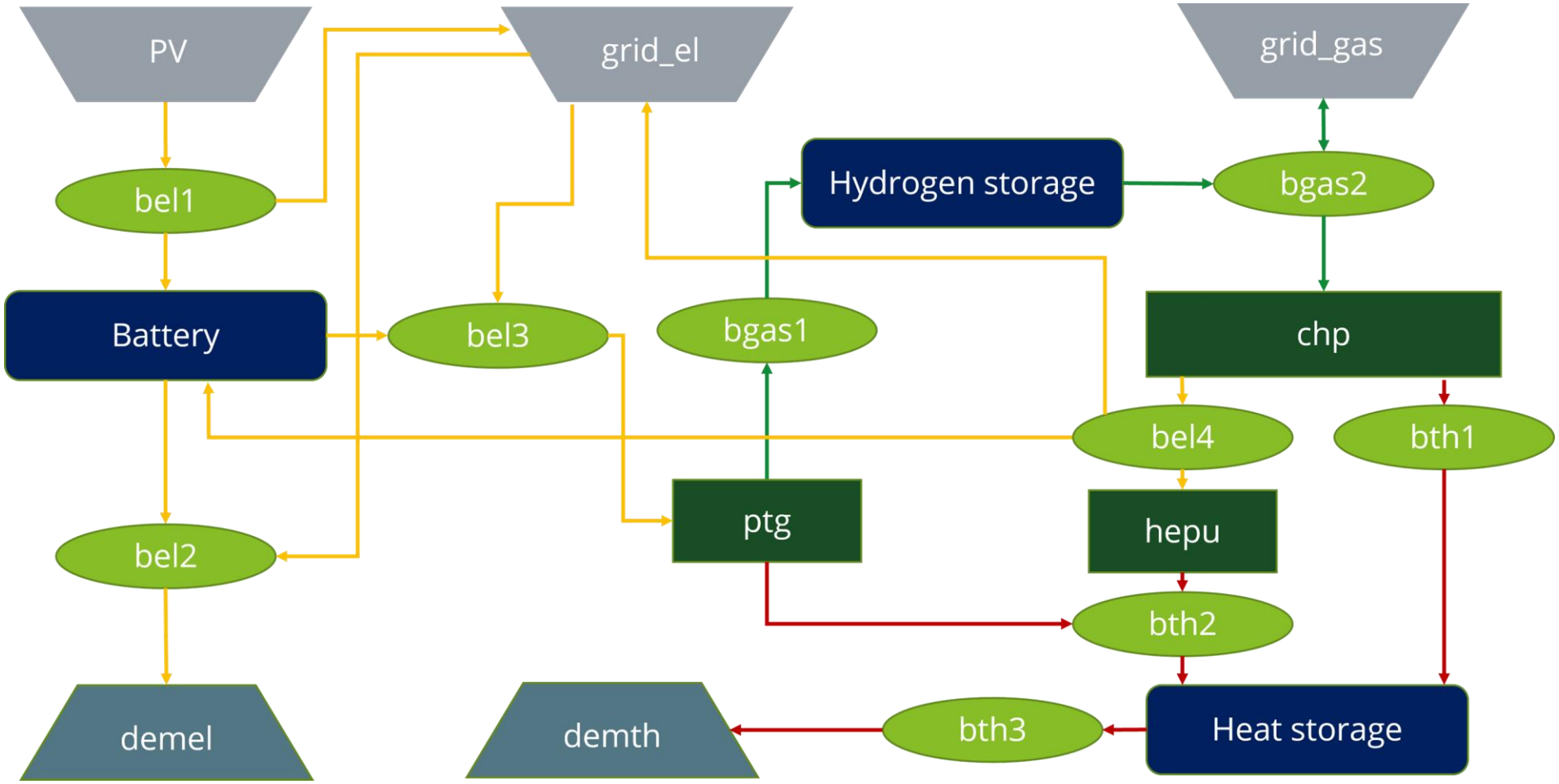

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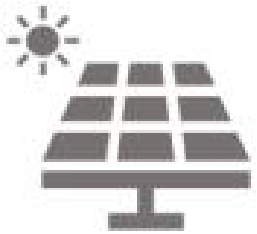

```
PV = invest.InvestPhotovoltaic(
                        label="PV_plant",
                        existing = 0,
                        invest_size = [524.4, 524.5],
                        invest_costs = [351191, 351192],
                        load_abstract_el = PV_load,
                        maintenance_effort = 0.025,
                        operation_effort = 5,
                        hourly_wage = 30,
                        insurance_costs = 1000,
                        outputs={b_el1: solph.Flow(emission_factor=0)}
                        )
```

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```
PowerToGas = invest.InvestElectrolyzer(
                                label="Power_to_Gas",
                                existing = 0,
                                invest_size = [0, 200, 500, 1000],
                                invest_costs = [0, 400000, 760000, 1500000],
                                modulated = True,
                                effMaxP_fuel_plus = 0.70,
                                effMaxP_th_plus = 0.20,
                                maintenance_costs = 70000,
                                operation_effort = 10,
                                hourly_wage = 30,
                                inputs={b_el3: solph.Flow()},
                                outputs={b_gas1: solph.Flow(),
                                         b_th2: solph.Flow()}
)
```

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component	Optimized power/capacity
PTG-plant	0 kW_{el}
PV-plant	524.5 kW_{el}
Battery	25.3 kWh_{el}
Heat storage	253.4 kWh_{th}
Hydrogen storage	0 kWh_{gas}
Combined heat and power plant	29.1 kW_{el}
Heat pump	104.6 kW_{th}

Any questions?