Design of an energy system for a district with oemof-solph
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```python
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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```python
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()}
)
```
## Design of an energy system for a district with oemof-solph

<table>
<thead>
<tr>
<th>component</th>
<th>Optimized power/capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTG-plant</td>
<td>0 kW&lt;sub&gt;el&lt;/sub&gt;</td>
</tr>
<tr>
<td>PV-plant</td>
<td>524.5 kW&lt;sub&gt;el&lt;/sub&gt;</td>
</tr>
<tr>
<td>Battery</td>
<td>25.3 kWh&lt;sub&gt;el&lt;/sub&gt;</td>
</tr>
<tr>
<td>Heat storage</td>
<td>253.4 kWh&lt;sub&gt;th&lt;/sub&gt;</td>
</tr>
<tr>
<td>Hydrogen storage</td>
<td>0 kWh&lt;sub&gt;gas&lt;/sub&gt;</td>
</tr>
<tr>
<td>Combined heat and power plant</td>
<td>29.1 kW&lt;sub&gt;el&lt;/sub&gt;</td>
</tr>
<tr>
<td>Heat pump</td>
<td>104.6 kW&lt;sub&gt;th&lt;/sub&gt;</td>
</tr>
</tbody>
</table>
Any questions?