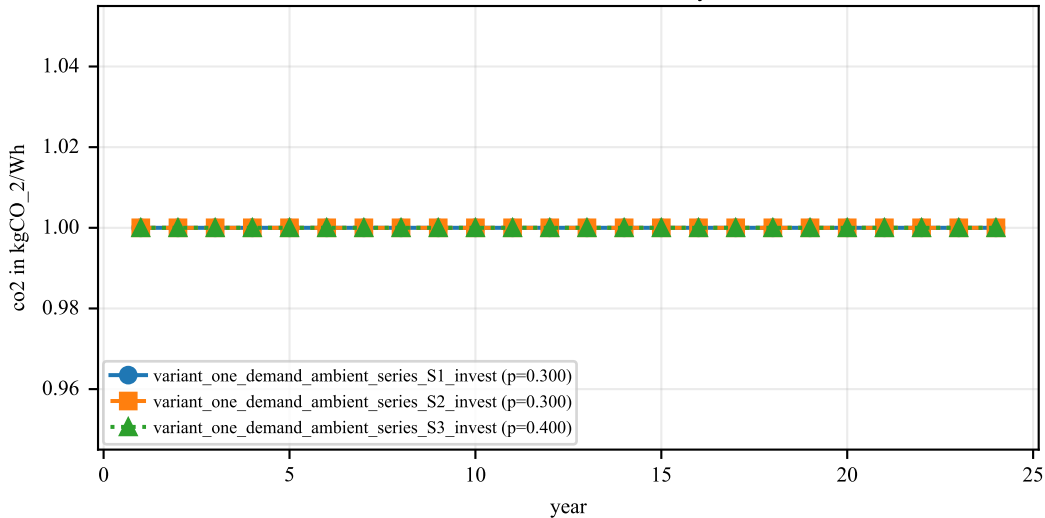
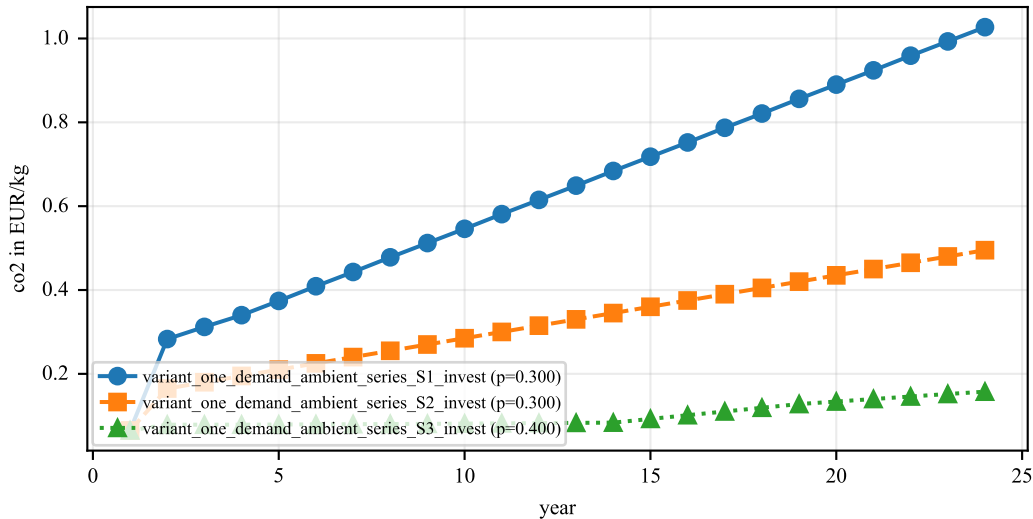


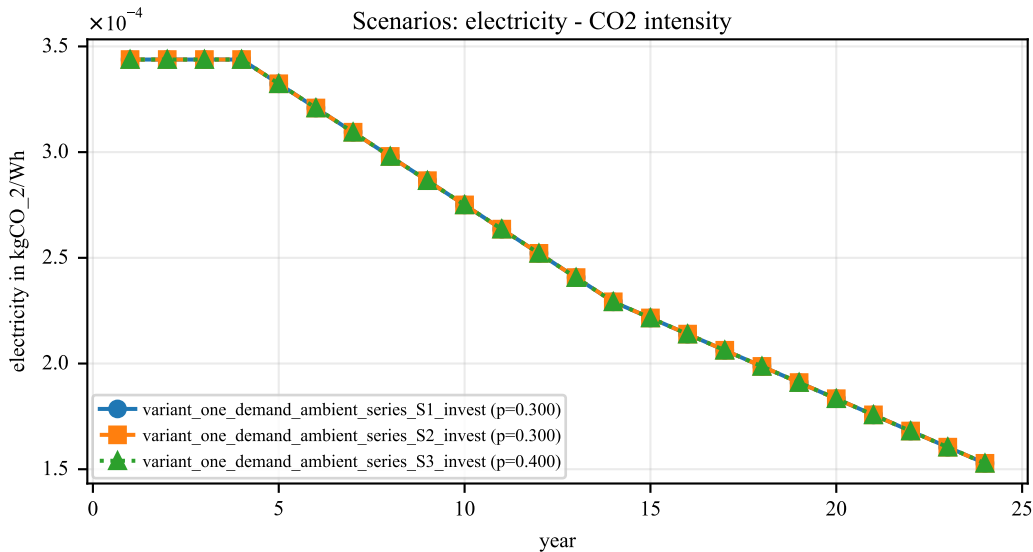
Scenarios: co2 - CO2 intensity



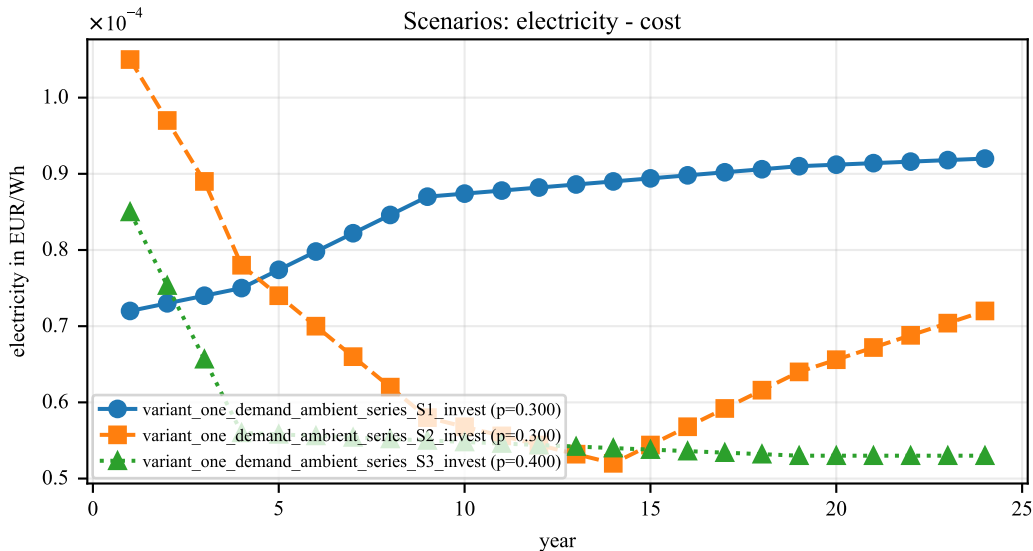
Scenarios: co2 - cost



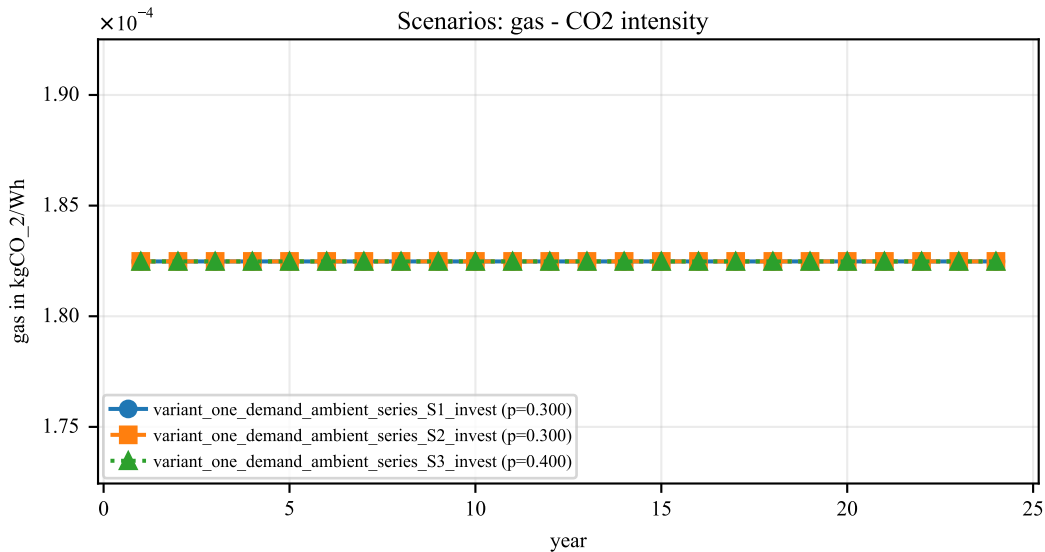
Scenarios: electricity - CO2 intensity



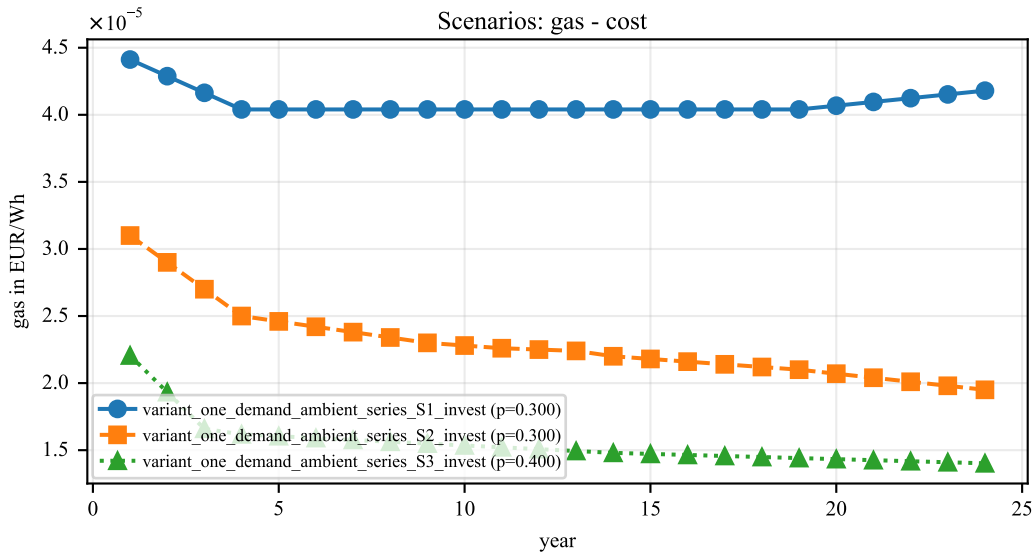
Scenarios: electricity - cost



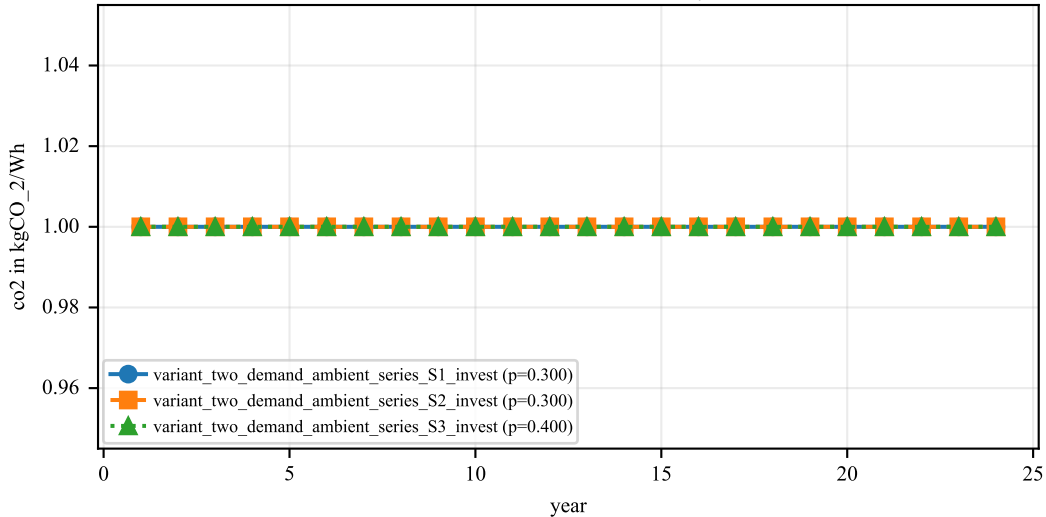
Scenarios: gas - CO2 intensity



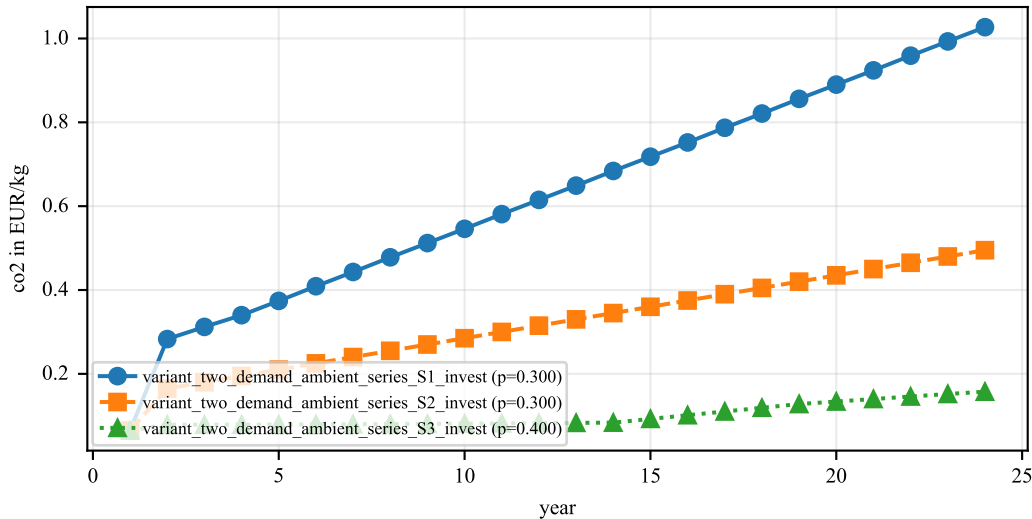
Scenarios: gas - cost



Scenarios: co2 - CO2 intensity

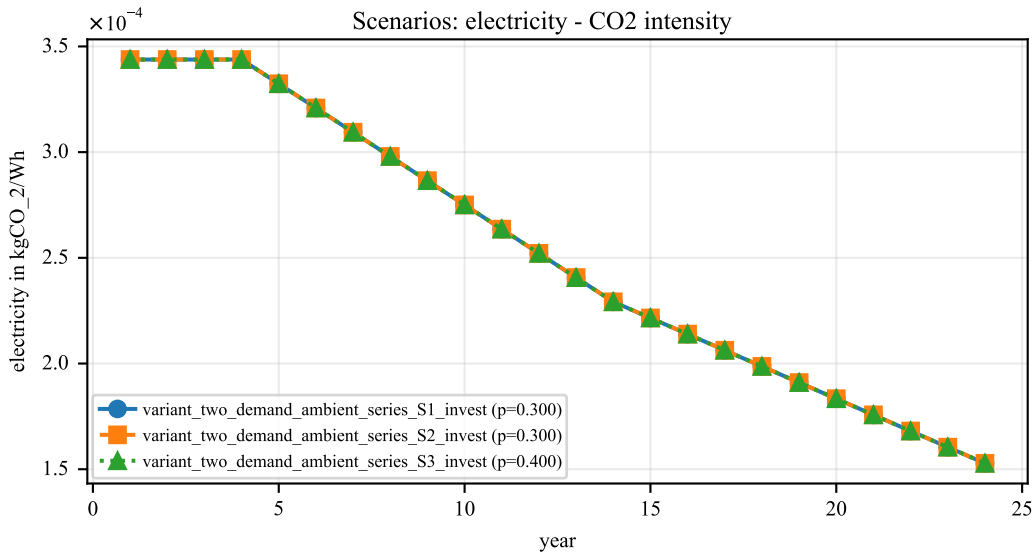


Scenarios: co2 - cost

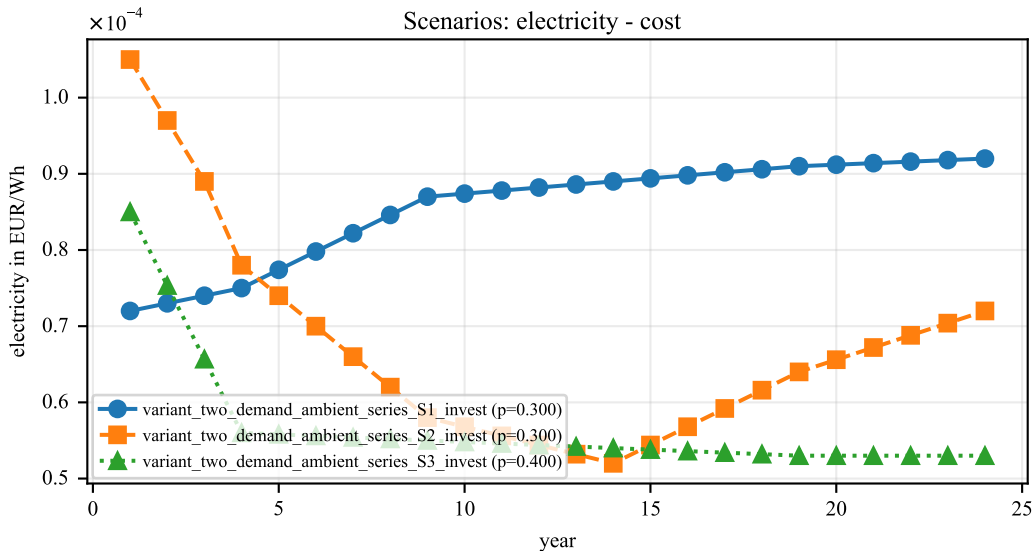




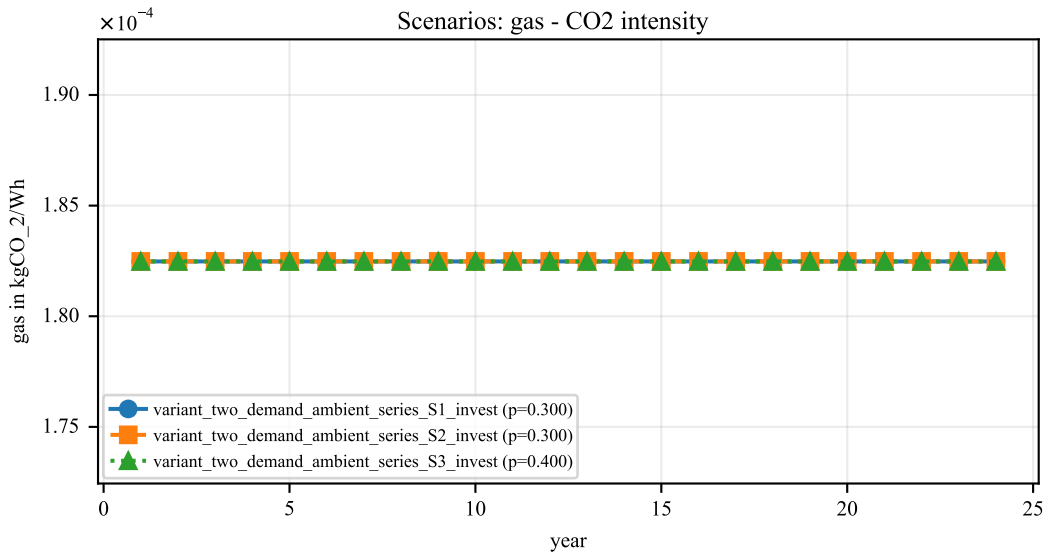
Scenarios: electricity - CO2 intensity



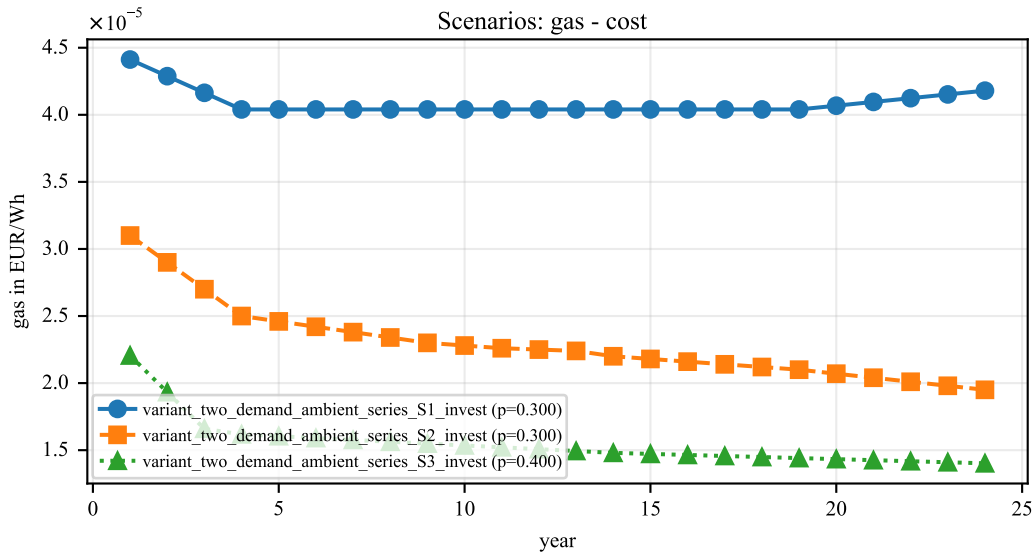
Scenarios: electricity - cost



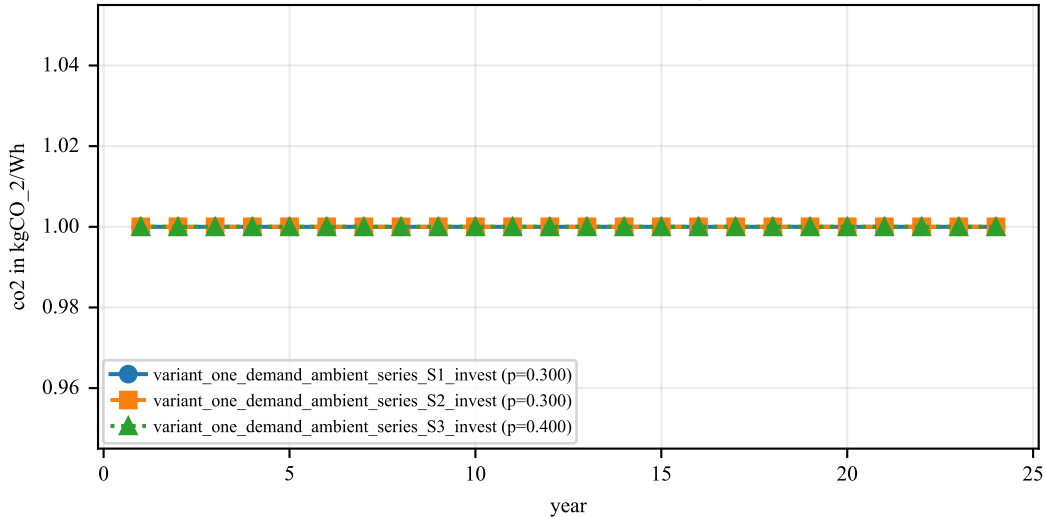
Scenarios: gas - CO2 intensity



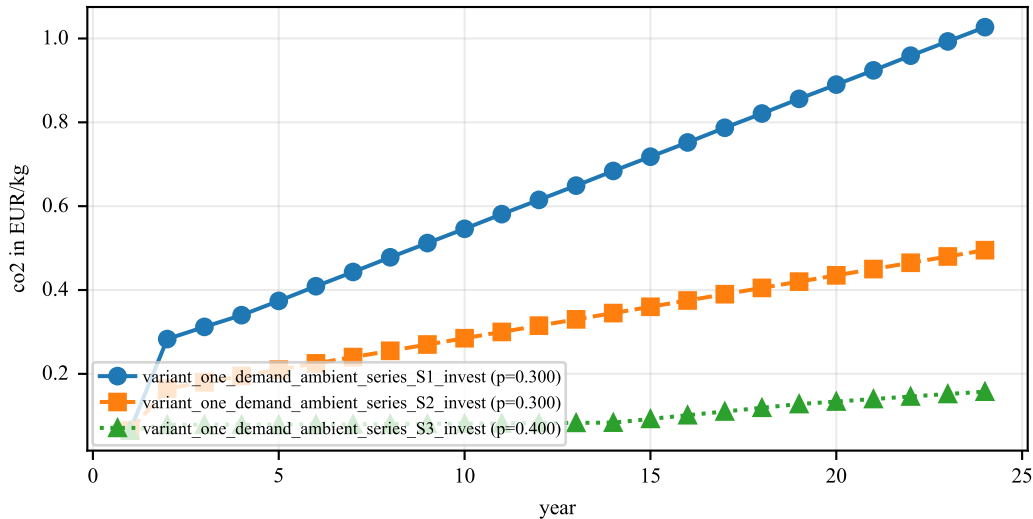
Scenarios: gas - cost



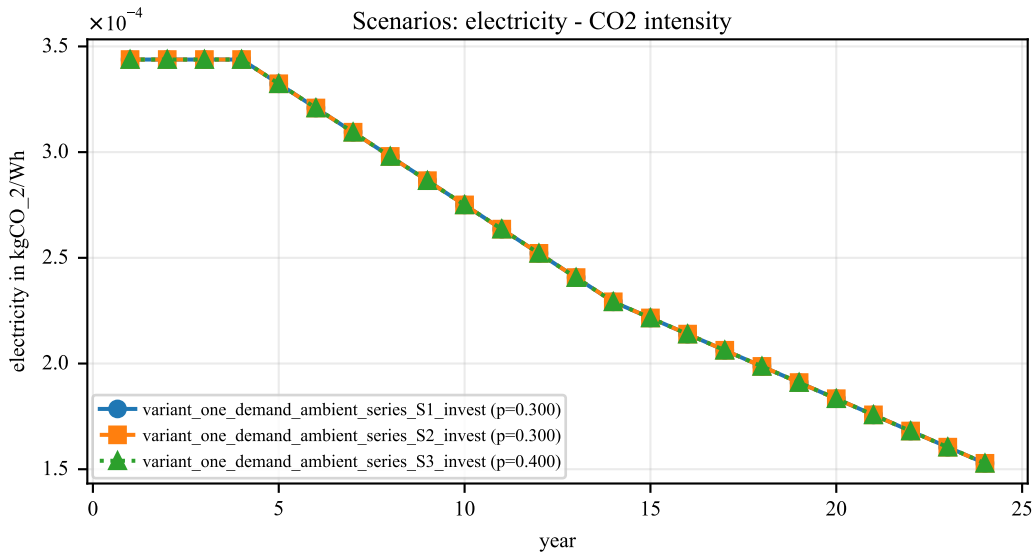
Scenarios: co2 - CO2 intensity



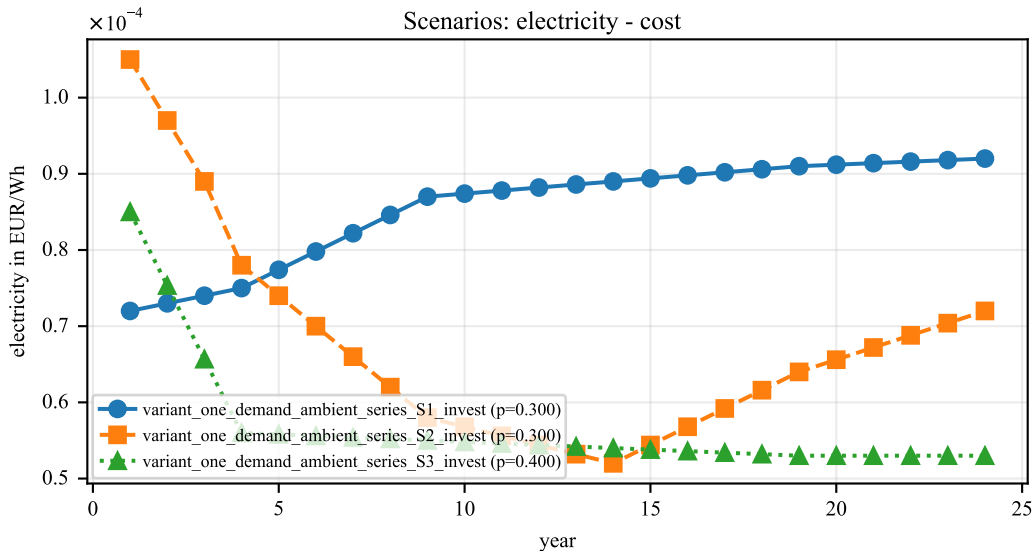
Scenarios: co2 - cost



Scenarios: electricity - CO2 intensity

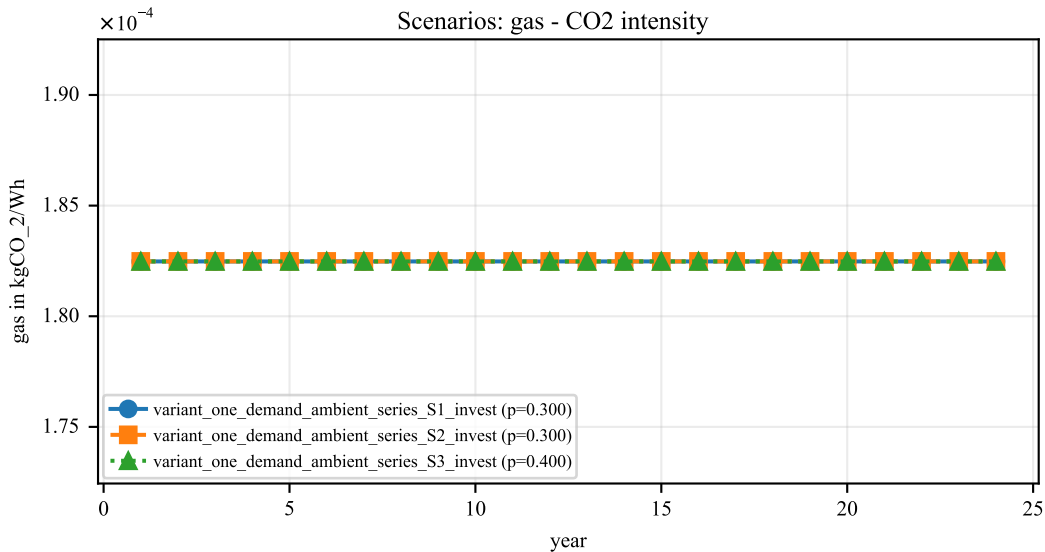


Scenarios: electricity - cost

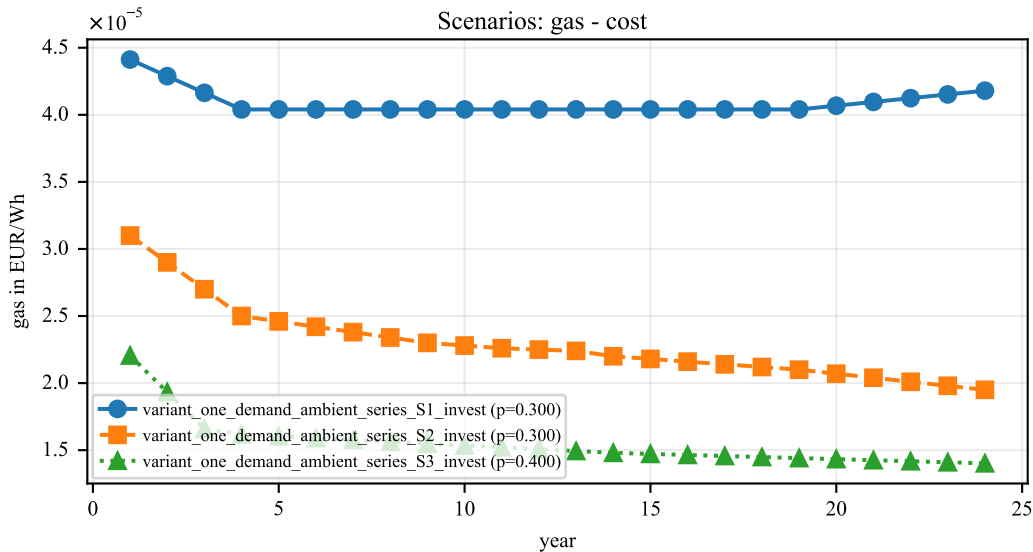




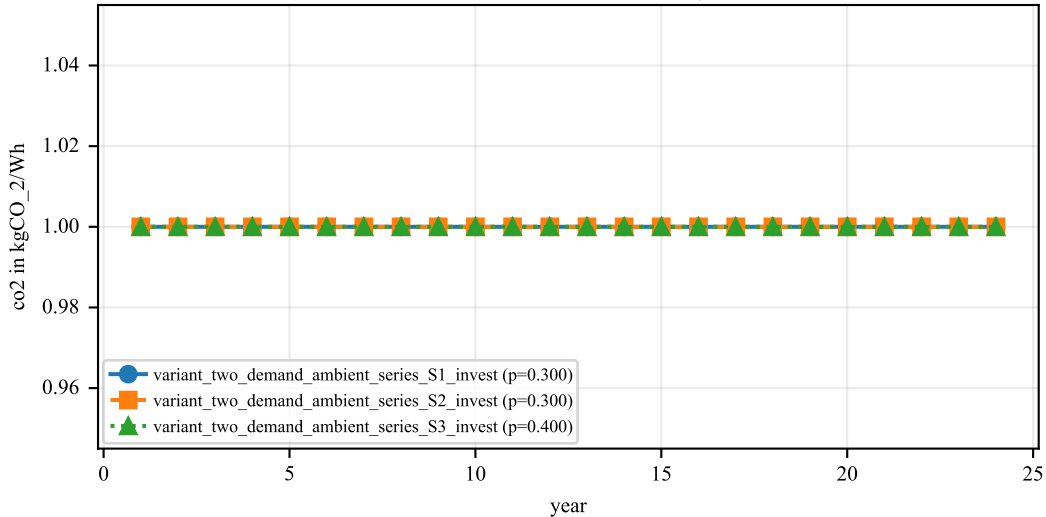
Scenarios: gas - CO2 intensity



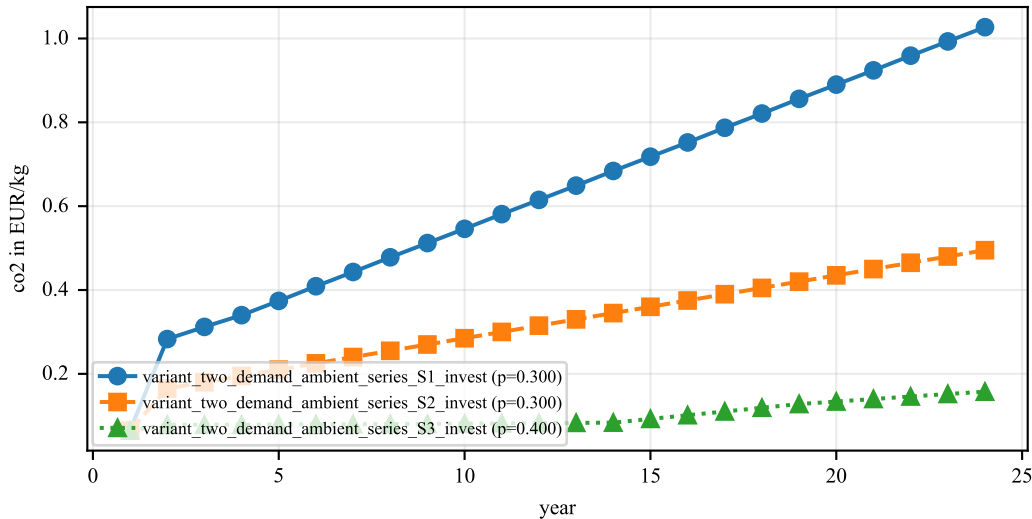
Scenarios: gas - cost



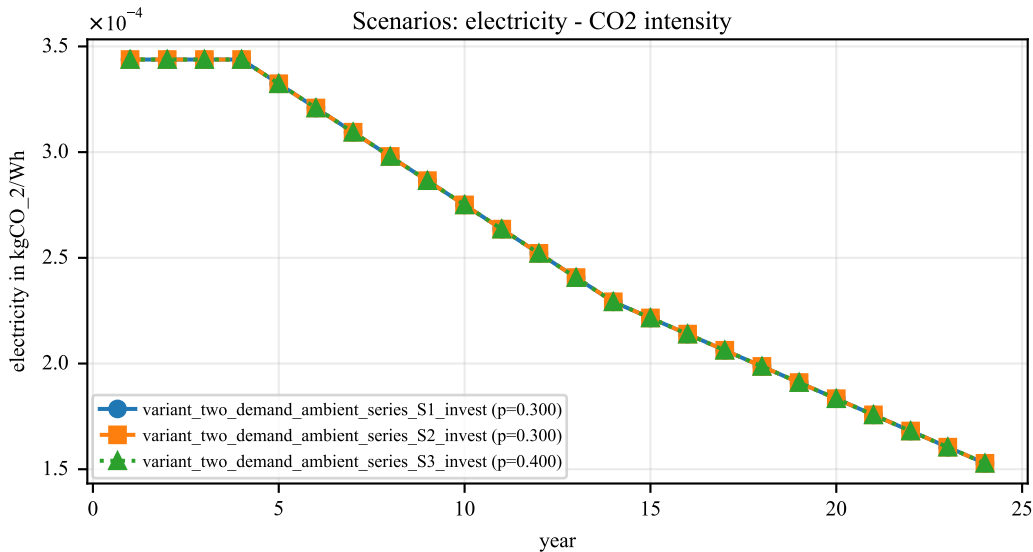
Scenarios: co2 - CO2 intensity



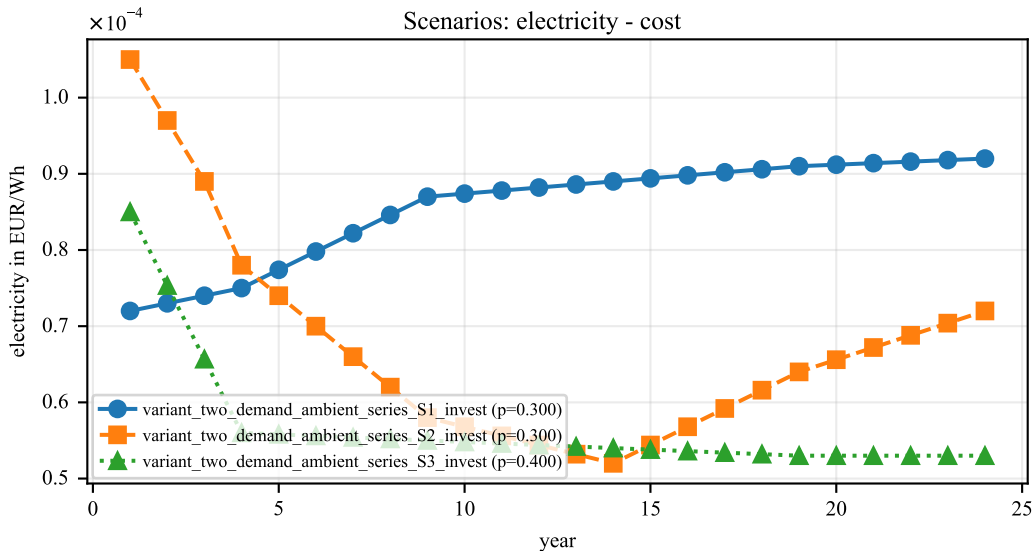
Scenarios: co2 - cost



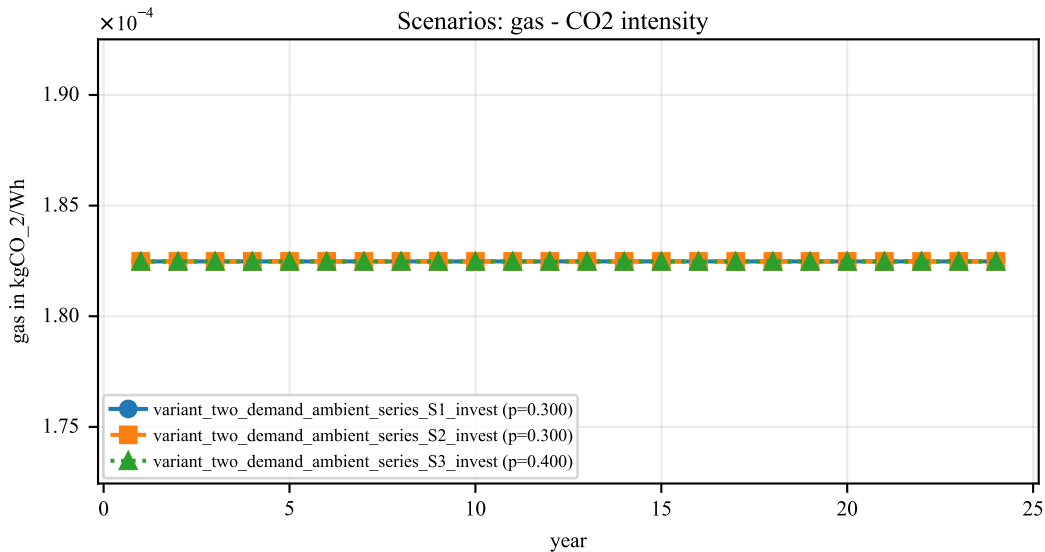
Scenarios: electricity - CO2 intensity



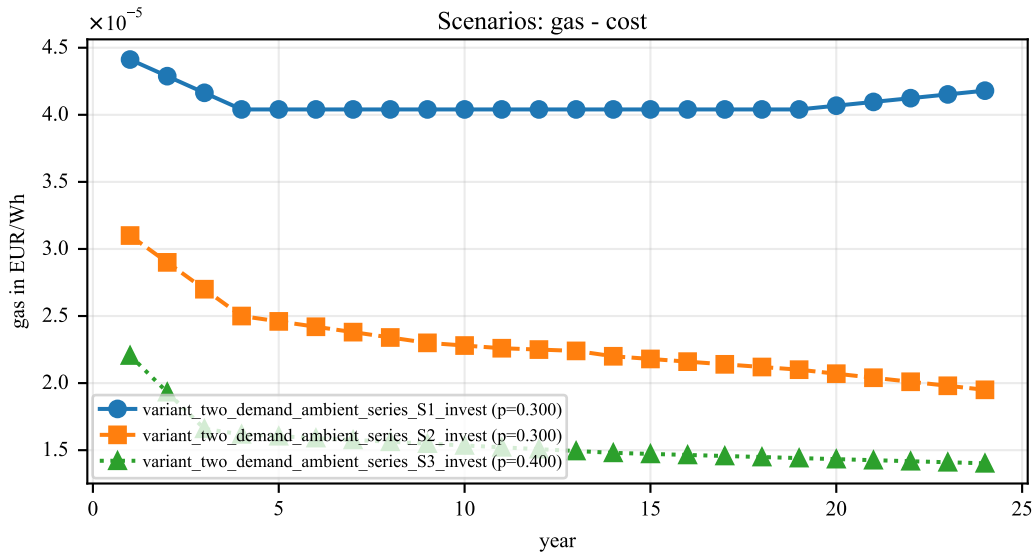
Scenarios: electricity - cost



Scenarios: gas - CO2 intensity



Scenarios: gas - cost





### KPI Table: All runs (1/3)

	stochastic_v1	stochastic_v2	regret_v1	regret_v2	robust_v1	robust_v2
<b>carriers</b>						
<b>costs</b>						
electricity_feed_in_eur	$-5.89 \times 10^2$	$-5.60 \times 10^2$	$-6.63 \times 10^2$	$-3.06 \times 10^2$	$-2.02 \times 10^1$	$-2.02 \times 10^1$
electricity_supplier_eur	$4.40 \times 10^2$	$9.92 \times 10^2$	$4.54 \times 10^2$	$9.55 \times 10^2$	$4.09 \times 10^3$	$4.09 \times 10^3$
gas_supplier_eur	$7.07 \times 10^3$	$5.20 \times 10^3$	$7.25 \times 10^3$	$4.51 \times 10^3$	$5.30 \times 10^3$	$5.30 \times 10^3$
<b>emissions</b>						
electricity_feed_in_t	$-9.07 \times 10^0$	$-8.42 \times 10^0$	$-1.02 \times 10^1$	$-4.62 \times 10^0$	$-3.00 \times 10^{-1}$	$-3.00 \times 10^{-1}$
electricity_supplier_t	$1.97 \times 10^0$	$4.48 \times 10^0$	$2.04 \times 10^0$	$4.28 \times 10^0$	$1.84 \times 10^1$	$1.84 \times 10^1$
gas_supplier_t	$4.87 \times 10^1$	$3.58 \times 10^1$	$4.99 \times 10^1$	$3.13 \times 10^1$	$3.62 \times 10^1$	$3.62 \times 10^1$
total_t	$4.16 \times 10^1$	$3.19 \times 10^1$	$4.18 \times 10^1$	$3.10 \times 10^1$	$5.44 \times 10^1$	$5.44 \times 10^1$
<b>energy</b>						
electricity_feed_in_wh	$-2.79 \times 10^7$	$-2.63 \times 10^7$	$-3.14 \times 10^7$	$-1.41 \times 10^7$	$-9.39 \times 10^5$	$-9.39 \times 10^5$
electricity_supplier_wh	$6.18 \times 10^6$	$1.42 \times 10^7$	$6.41 \times 10^6$	$1.37 \times 10^7$	$5.77 \times 10^7$	$5.77 \times 10^7$
gas_supplier_wh	$2.67 \times 10^8$	$1.96 \times 10^8$	$2.73 \times 10^8$	$1.72 \times 10^8$	$1.98 \times 10^8$	$1.98 \times 10^8$

### KPI Table: All runs (2/3)

	stochastic_v1	stochastic_v2	regret_v1	regret_v2	robust_v1	robust_v2
<b>investment</b>						
hp_hnht_cn_bought	1.00x10 <sup>0</sup>	—	1.00x10 <sup>0</sup>	—	—	—
hp_hnht_cn_investment_cost	1.74x10 <sup>4</sup>	—	7.08x10 <sup>3</sup>	—	—	—
hp_hnht_cn_p_out_nom	3.50x10 <sup>4</sup>	—	9.10x10 <sup>3</sup>	—	—	—
hp_hnht_hnlt_bought	—	1.00x10 <sup>0</sup>	—	1.00x10 <sup>0</sup>	—	—
hp_hnht_hnlt_investment_cost	—	1.65x10 <sup>3</sup>	—	4.66x10 <sup>3</sup>	—	—
hp_hnht_hnlt_p_out_nom	—	1.00x10 <sup>3</sup>	—	4.81x10 <sup>3</sup>	—	—
hp_hnlt_cn_bought	—	1.00x10 <sup>0</sup>	—	1.00x10 <sup>0</sup>	—	—
hp_hnlt_cn_investment_cost	—	1.05x10 <sup>4</sup>	—	1.05x10 <sup>4</sup>	—	—
hp_hnlt_cn_p_out_nom	—	1.65x10 <sup>4</sup>	—	1.65x10 <sup>4</sup>	—	—
hx_hnht_hnlt_bought	—	1.00x10 <sup>0</sup>	—	1.00x10 <sup>0</sup>	—	—
hx_hnht_hnlt_investment_cost	—	8.86x10 <sup>3</sup>	—	8.86x10 <sup>3</sup>	—	—
hx_hnht_hnlt_p_out_nom	—	4.00x10 <sup>0</sup>	—	4.00x10 <sup>0</sup>	—	—
st_cn_E_nom	0	2.03x10 <sup>5</sup>	0	2.03x10 <sup>5</sup>	—	—
st_cn_bought	0	1.00x10 <sup>0</sup>	0	1.00x10 <sup>0</sup>	—	—
st_cn_investment_cost	0	8.37x10 <sup>3</sup>	0	8.37x10 <sup>3</sup>	—	—
st_hnht_E_nom	7.00x10 <sup>4</sup>	2.00x10 <sup>4</sup>	4.63x10 <sup>4</sup>	3.86x10 <sup>4</sup>	—	—
st_hnht_bought	1.00x10 <sup>0</sup>	1.00x10 <sup>0</sup>	1.00x10 <sup>0</sup>	1.00x10 <sup>0</sup>	—	—
st_hnht_investment_cost	3.33x10 <sup>3</sup>	1.12x10 <sup>3</sup>	2.32x10 <sup>3</sup>	1.98x10 <sup>3</sup>	—	—
st_hnlt_E_nom	—	1.00x10 <sup>5</sup>	—	1.00x10 <sup>5</sup>	—	—
st_hnlt_bought	—	1.00x10 <sup>0</sup>	—	1.00x10 <sup>0</sup>	—	—
st_hnlt_investment_cost	—	4.53x10 <sup>3</sup>	—	4.53x10 <sup>3</sup>	—	—
<b>objective</b>						
capex	2.07x10 <sup>4</sup>	3.50x10 <sup>4</sup>	9.40x10 <sup>3</sup>	3.89x10 <sup>4</sup>	0	0
tac	5.09x10 <sup>4</sup>	4.16x10 <sup>4</sup>	5.82x10 <sup>4</sup>	7.51x10 <sup>4</sup>	6.39x10 <sup>4</sup>	6.39x10 <sup>4</sup>



KPI Table: stochastic\_v1

	stochastic_v1
carriers	
costs	
electricity_feed_in_eur	$-5.89 \times 10^2$
electricity_supplier_eur	$4.40 \times 10^2$
gas_supplier_eur	$7.07 \times 10^3$
emissions	
electricity_feed_in_t	$-9.07 \times 10^0$
electricity_supplier_t	$1.97 \times 10^0$
gas_supplier_t	$4.87 \times 10^1$
total_t	$4.16 \times 10^1$
energy	
electricity_feed_in_wh	$-2.79 \times 10^7$
electricity_supplier_wh	$6.18 \times 10^6$
gas_supplier_wh	$2.67 \times 10^8$
investment	
hp_hnht_cn_bought	$1.00 \times 10^0$
hp_hnht_cn_investment_cost	$1.74 \times 10^4$
hp_hnht_cn_p_out_nom	$3.50 \times 10^4$
st_cn_E_nom	0
st_cn_bought	0
st_cn_investment_cost	0
st_hnht_E_nom	$7.00 \times 10^4$
st_hnht_bought	$1.00 \times 10^0$
st_hnht_investment_cost	$3.33 \times 10^3$
objective	
capex	$2.07 \times 10^4$
tac	$5.09 \times 10^4$
scenario	
probability_sum	$1.00 \times 10^0$

KPI Table: stochastic\_v2

	stochastic_v2
carriers	
costs	
electricity_feed_in_eur	$-5.60 \times 10^2$
electricity_supplier_eur	$9.92 \times 10^2$
gas_supplier_eur	$5.20 \times 10^3$
emissions	
electricity_feed_in_t	$-8.42 \times 10^0$
electricity_supplier_t	$4.48 \times 10^0$
gas_supplier_t	$3.58 \times 10^1$
total_t	$3.19 \times 10^1$
energy	
electricity_feed_in_wh	$-2.63 \times 10^7$
electricity_supplier_wh	$1.42 \times 10^7$
gas_supplier_wh	$1.96 \times 10^8$
investment	
hp_hnht_hnlt_bought	$1.00 \times 10^0$
hp_hnht_hnlt_investment_cost	$1.65 \times 10^3$
hp_hnht_hnlt_p_out_nom	$1.00 \times 10^3$
hp_hnlt_cn_bought	$1.00 \times 10^0$
hp_hnlt_cn_investment_cost	$1.05 \times 10^4$
hp_hnlt_cn_p_out_nom	$1.65 \times 10^4$
hx_hnht_hnlt_bought	$1.00 \times 10^0$
hx_hnht_hnlt_investment_cost	$8.86 \times 10^3$
hx_hnht_hnlt_p_out_nom	$4.00 \times 10^0$
st_cn_E_nom	$2.03 \times 10^5$
st_cn_bought	$1.00 \times 10^0$
st_cn_investment_cost	$8.37 \times 10^3$
st_hnht_E_nom	$2.00 \times 10^4$
st_hnht_bought	$1.00 \times 10^0$
st_hnht_investment_cost	$1.12 \times 10^3$
st_hnlt_E_nom	$1.00 \times 10^5$
st_hnlt_bought	$1.00 \times 10^0$
st_hnlt_investment_cost	$4.53 \times 10^3$
objective	
capex	$3.50 \times 10^4$
tac	$4.16 \times 10^4$
scenario	
probability_sum	$1.00 \times 10^0$

KPI Table: regret\_v1

	regret_v1
carriers	
costs	
electricity_feed_in_eur	$-6.63 \times 10^2$
electricity_supplier_eur	$4.54 \times 10^2$
gas_supplier_eur	$7.25 \times 10^3$
emissions	
electricity_feed_in_t	$-1.02 \times 10^1$
electricity_supplier_t	$2.04 \times 10^0$
gas_supplier_t	$4.99 \times 10^1$
total_t	$4.18 \times 10^1$
energy	
electricity_feed_in_wh	$-3.14 \times 10^7$
electricity_supplier_wh	$6.41 \times 10^6$
gas_supplier_wh	$2.73 \times 10^8$
investment	
hp_hnht_cn_bought	$1.00 \times 10^0$
hp_hnht_cn_investment_cost	$7.08 \times 10^3$
hp_hnht_cn_p_out_nom	$9.10 \times 10^3$
st_cn_E_nom	0
st_cn_bought	0
st_cn_investment_cost	0
st_hnht_E_nom	$4.63 \times 10^4$
st_hnht_bought	$1.00 \times 10^0$
st_hnht_investment_cost	$2.32 \times 10^3$
objective	
capex	$9.40 \times 10^3$
tac	$5.82 \times 10^4$
scenario	
probability_sum	$1.00 \times 10^0$

## KPI Table: regret\_v2

	regret_v2
<b>carriers</b>	
<b>costs</b>	
electricity_feed_in_eur	$-3.06 \times 10^2$
electricity_supplier_eur	$9.55 \times 10^2$
gas_supplier_eur	$4.51 \times 10^3$
<b>emissions</b>	
electricity_feed_in_t	$-4.62 \times 10^0$
electricity_supplier_t	$4.28 \times 10^0$
gas_supplier_t	$3.13 \times 10^1$
total_t	$3.10 \times 10^1$
<b>energy</b>	
electricity_feed_in_wh	$-1.41 \times 10^7$
electricity_supplier_wh	$1.37 \times 10^7$
gas_supplier_wh	$1.72 \times 10^8$
<b>investment</b>	
hp_hnht_hnlt_bought	$1.00 \times 10^0$
hp_hnht_hnlt_investment_cost	$4.66 \times 10^3$
hp_hnht_hnlt_p_out_nom	$4.81 \times 10^3$
hp_hnlt_cn_bought	$1.00 \times 10^0$
hp_hnlt_cn_investment_cost	$1.05 \times 10^4$
hp_hnlt_cn_p_out_nom	$1.65 \times 10^4$
hx_hnht_hnlt_bought	$1.00 \times 10^0$
hx_hnht_hnlt_investment_cost	$8.86 \times 10^3$
hx_hnht_hnlt_p_out_nom	$4.00 \times 10^0$
st_cn_E_nom	$2.03 \times 10^5$
st_cn_bought	$1.00 \times 10^0$
st_cn_investment_cost	$8.37 \times 10^3$
st_hnht_E_nom	$3.86 \times 10^4$
st_hnht_bought	$1.00 \times 10^0$
st_hnht_investment_cost	$1.98 \times 10^3$
st_hnlt_E_nom	$1.00 \times 10^5$
st_hnlt_bought	$1.00 \times 10^0$
st_hnlt_investment_cost	$4.53 \times 10^3$
<b>objective</b>	
capex	$3.89 \times 10^4$
tac	$7.51 \times 10^4$
<b>scenario</b>	
probability_sum	$1.00 \times 10^0$

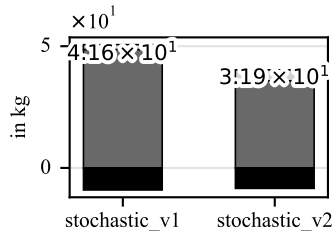
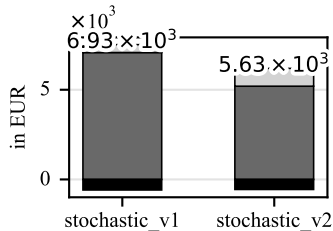
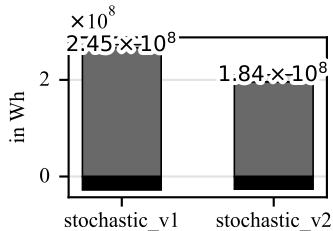
**KPI Table: robust\_v1**

	<b>robust_v1</b>
<b>carriers</b>	
<b>costs</b>	
electricity_feed_in_eur	$-2.02 \times 10^1$
electricity_supplier_eur	$4.09 \times 10^3$
gas_supplier_eur	$5.30 \times 10^3$
<b>emissions</b>	
electricity_feed_in_t	$-3.00 \times 10^{-1}$
electricity_supplier_t	$1.84 \times 10^1$
gas_supplier_t	$3.62 \times 10^1$
total_t	$5.44 \times 10^1$
<b>energy</b>	
electricity_feed_in_wh	$-9.39 \times 10^5$
electricity_supplier_wh	$5.77 \times 10^7$
gas_supplier_wh	$1.98 \times 10^8$
<b>objective</b>	
capex	0
tac	$6.39 \times 10^4$
<b>scenario</b>	
probability_sum	$1.00 \times 10^0$

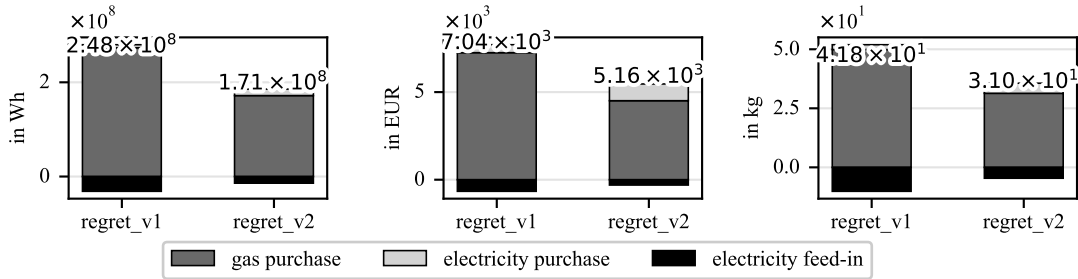


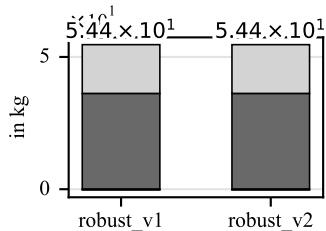
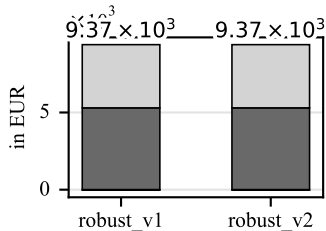
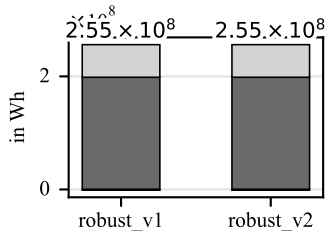
**KPI Table: robust\_v2**

	<b>robust_v2</b>
<b>carriers</b>	
<b>costs</b>	
electricity_feed_in_eur	$-2.02 \times 10^1$
electricity_supplier_eur	$4.09 \times 10^3$
gas_supplier_eur	$5.30 \times 10^3$
<b>emissions</b>	
electricity_feed_in_t	$-3.00 \times 10^{-1}$
electricity_supplier_t	$1.84 \times 10^1$
gas_supplier_t	$3.62 \times 10^1$
total_t	$5.44 \times 10^1$
<b>energy</b>	
electricity_feed_in_wh	$-9.39 \times 10^5$
electricity_supplier_wh	$5.77 \times 10^7$
gas_supplier_wh	$1.98 \times 10^8$
<b>objective</b>	
capex	0
tac	$6.39 \times 10^4$
<b>scenario</b>	
probability_sum	$1.00 \times 10^0$



gas purchase electricity purchase electricity feed-in





gas purchase electricity purchase electricity feed-in

