

# 2022w51 ATC Extraction Results

Nordic RCC

March 14, 2023

# Notes

ATCE industrial tool: The ATC extraction in NorCap entered parallel run in November 2022. The execution is dependent on market simulation results. Due to the grace period on market simulations, ATCE is executed on historical EDDs.

ATCE Backup: The ATC extraction module contain a software defect causing the calculation to fail for some EDDs. This defect is related to the calculation on historical EDDs, where the calculation module loses an index to a previously published flow-based domain. Our vendor is working to resolve the issue. Meanwhile, ATCE backup will be triggered for the failed calculations. The ATCE backup process copies for each border and direction the minimum NTC among three candidates; [NTC of previous MTU, if valid; NTC of following MTU, if valid; NTC for same MTU on previous valid EDD].

# Bidding zone lock-in statistics

An area operates at maximum export when the sum of ATC on all exporting directions of that area is less than 1MW.

An area operates at maximum import when the sum of ATC on all importing directions of that area is less than 1MW.

An area operates in lock-in if during the same MTU it is operating at both maximum export and maximum import.

Bidding zone	#MTUs at max Export	#MTUs at max Import	#MTUs at lock-in
DK1	0	0	0
DK2	0	0	0
SE1	3	0	0
SE2	23	0	0
SE3	0	0	0
SE4	0	0	0
NO1	0	0	0
NO2	0	0	0
NO3	0	0	0
NO4	75	0	0
NO5	0	4	0
FI	0	0	0

# Border lock-in statistics

A bidding zone border is operating in a lock-in situation, if at a given MTU, the ATC of the bidding zone border is smaller than 1MW in both forward and reverse trading direction.

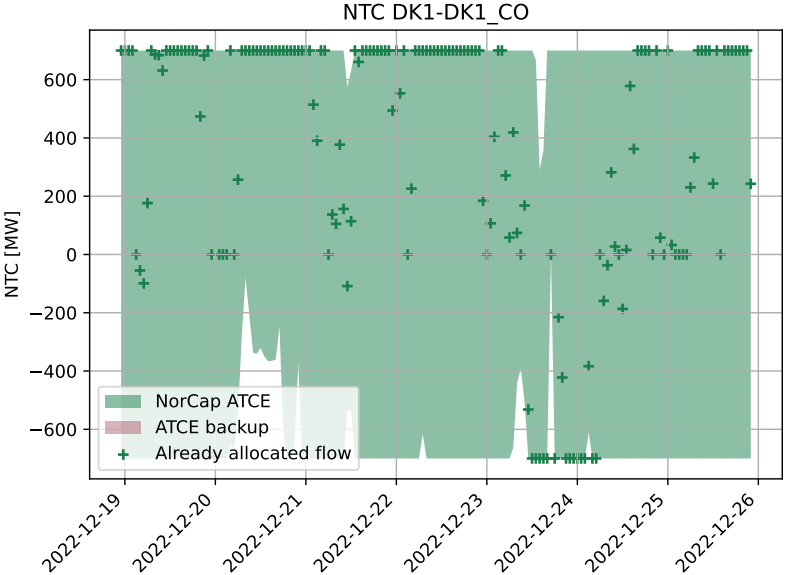
Border	#MTUs at lock-in
DK1A-SE3	3
SE3-DK1A	3
FI-SE3	3
SE3-FI	3
NO1-SE3	5
SE3-NO1	5
NO3-SE2	17
SE2-NO3	17
NO4-SE1	15
SE1-NO4	15
NO4-SE2	17
SE2-NO4	17

# Border lock-in statistics

A bidding zone border is operating in a lock-in situation, if at a given MTU, the ATC of the bidding zone border is smaller than 1MW in both forward and reverse trading direction.

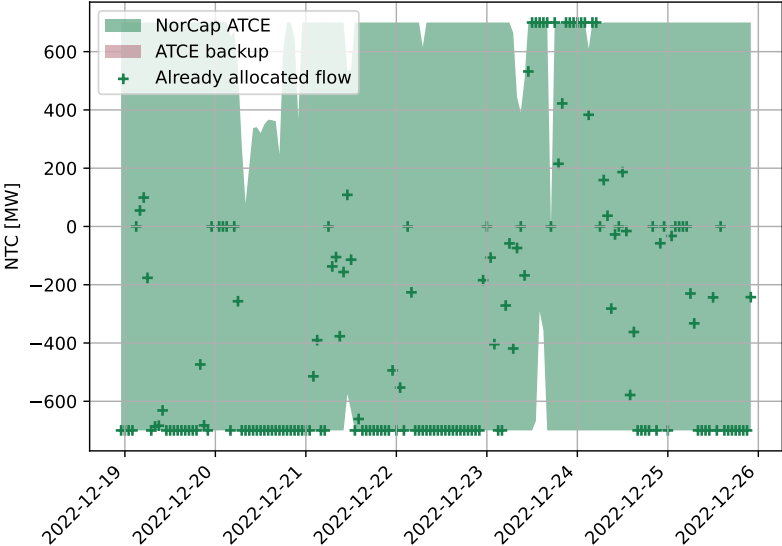
Border	#MTUs at lock-in
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# DK1-DK1\_CO



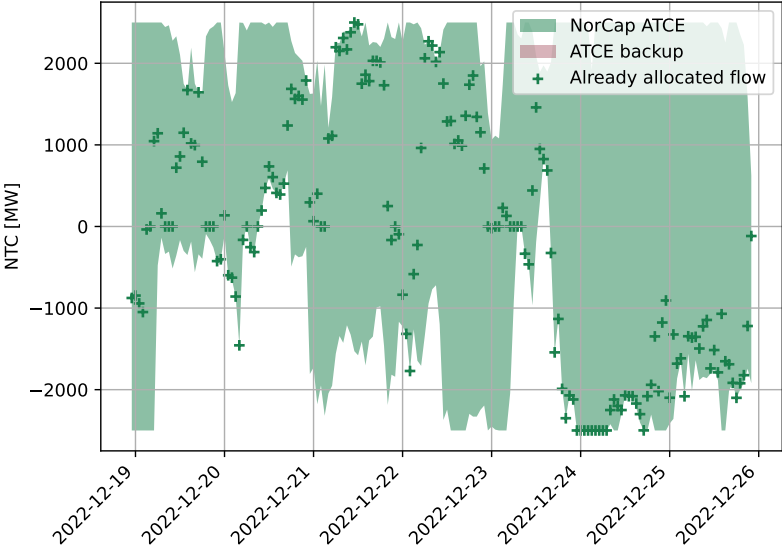
# DK1\_CO-DK1

NTC DK1\_CO-DK1



# DK1-DK1\_DE

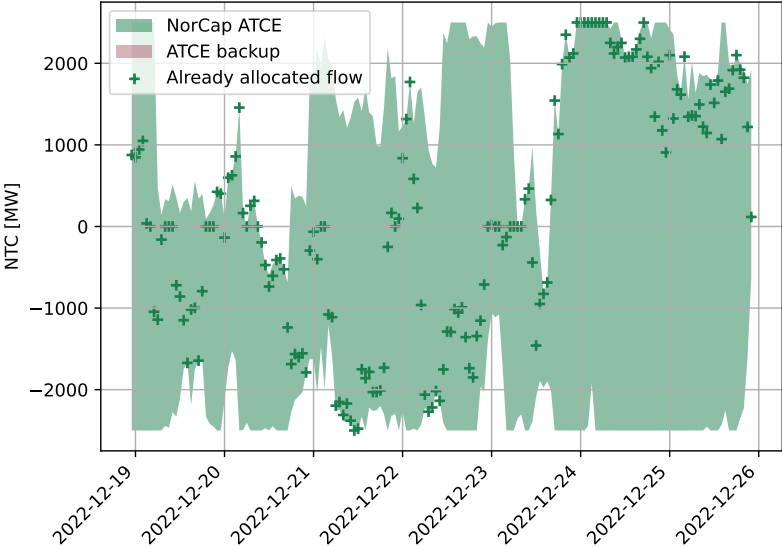
## NTC DK1-DK1\_DE





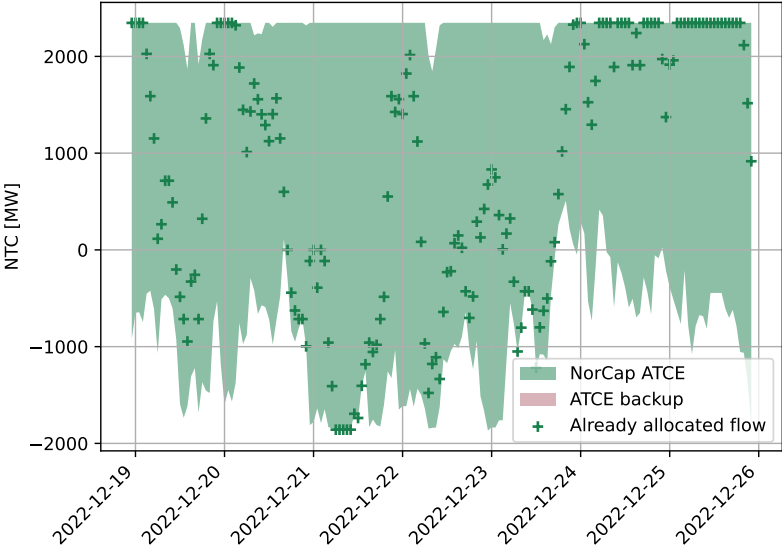
# DK1\_DE-DK1

## NTC DK1\_DE-DK1

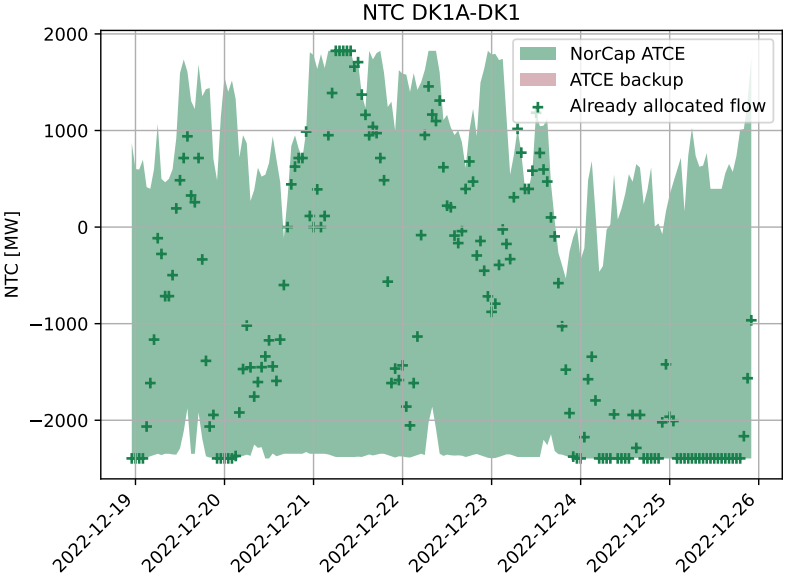


# DK1-DK1A

NTC DK1-DK1A

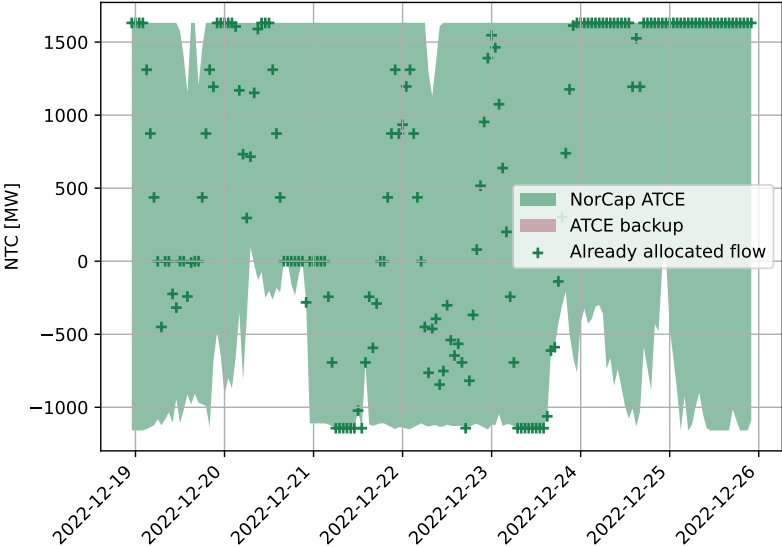


# DK1A-DK1



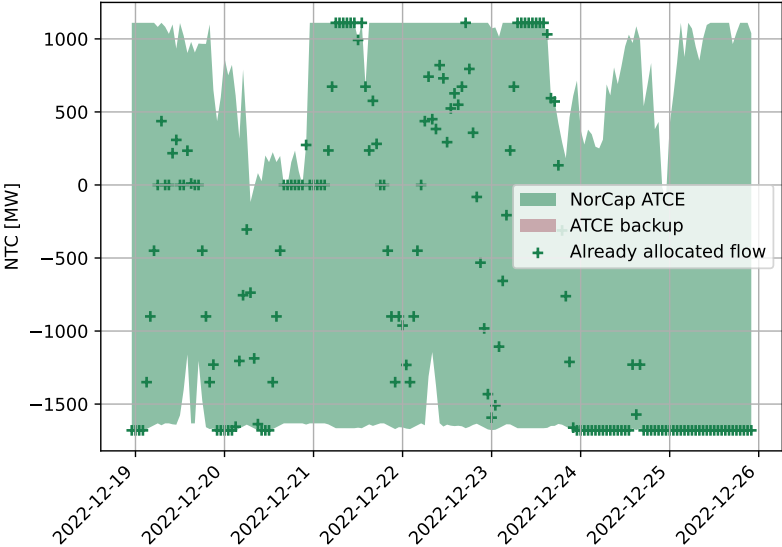
# DK1A-NO2

## NTC DK1A-NO2



# NO2-DK1A

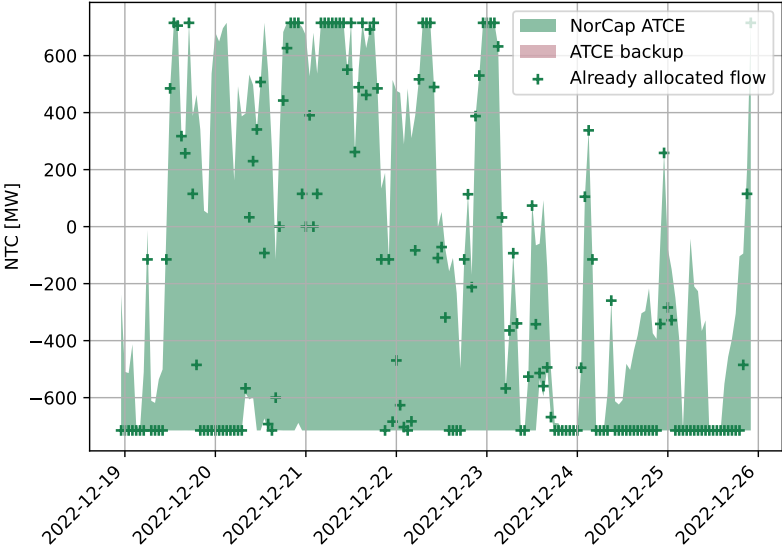
NTC NO2-DK1A





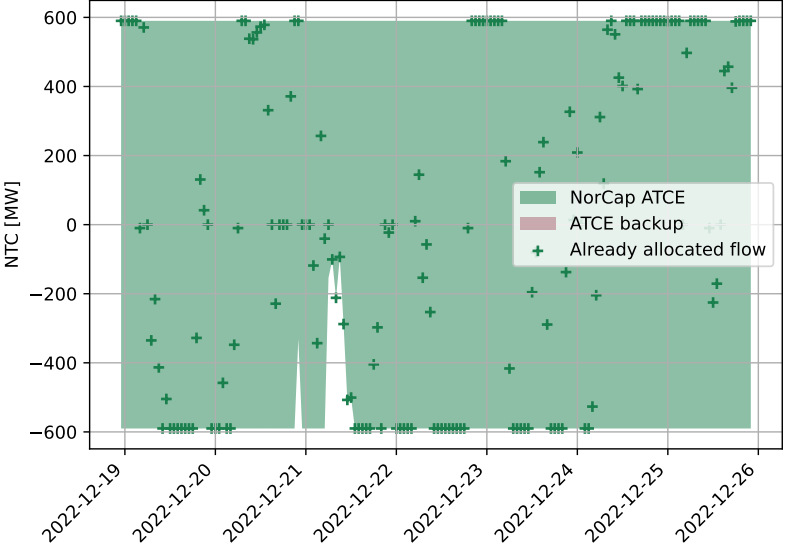
# SE3-DK1A

## NTC SE3-DK1A



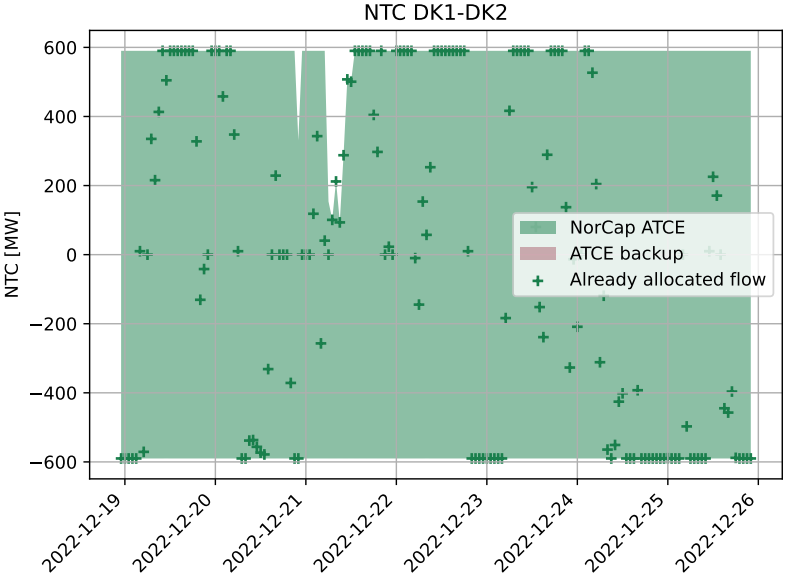
# DK2-DK1

NTC DK2-DK1



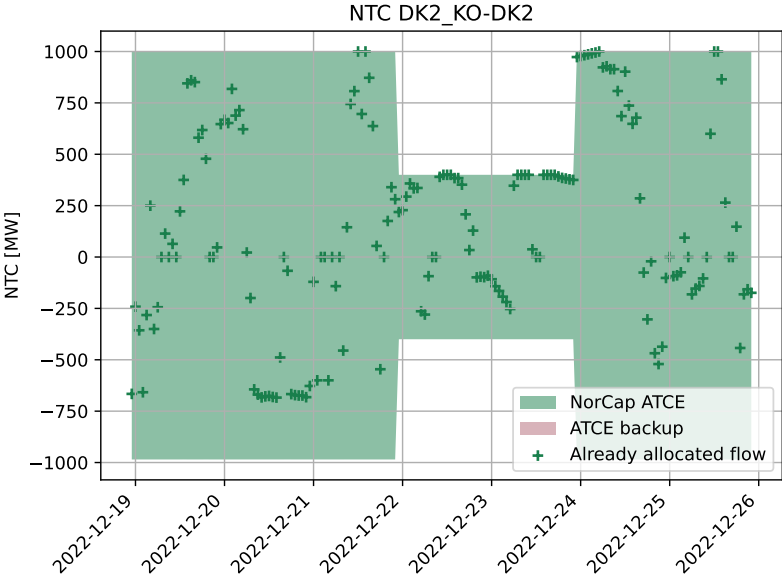


# DK1-DK2



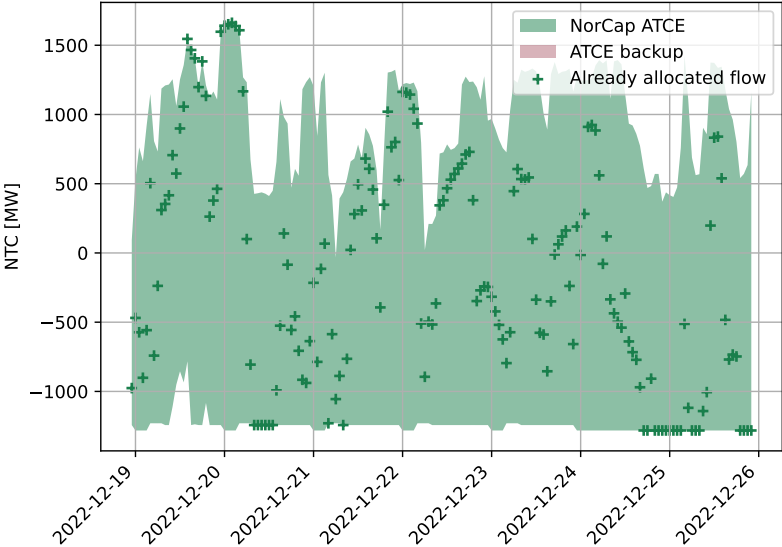


# DK2\_KO-DK2



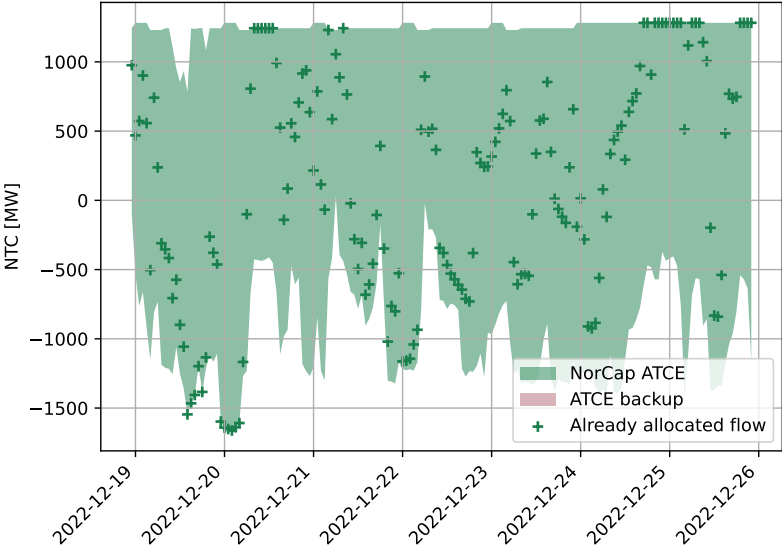
# DK2-SE4

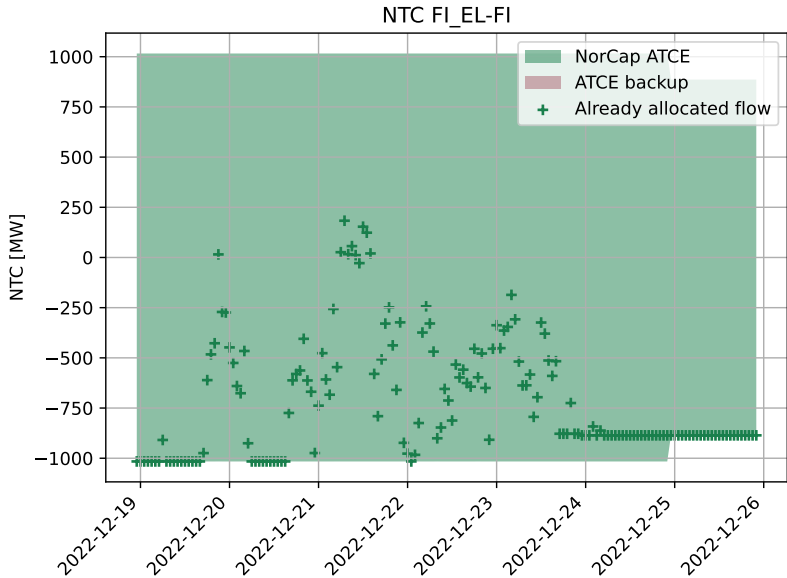
## NTC DK2-SE4



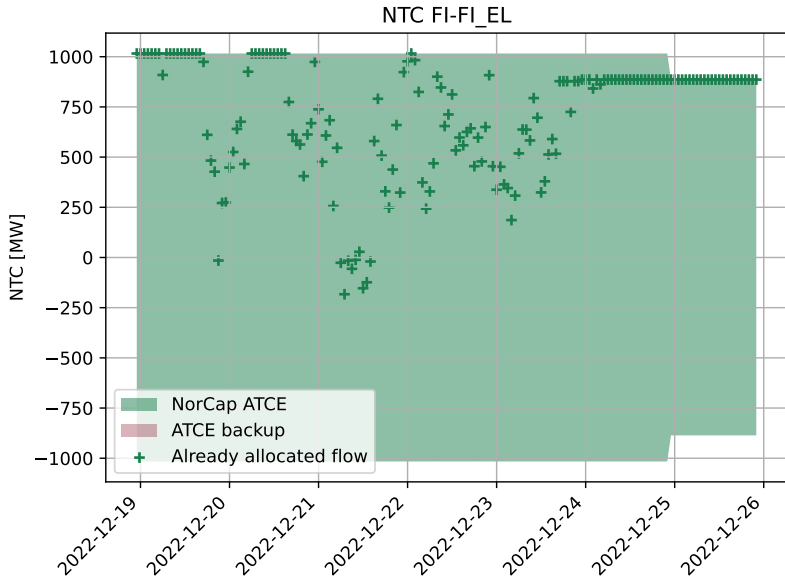
# SE4-DK2

## NTC SE4-DK2



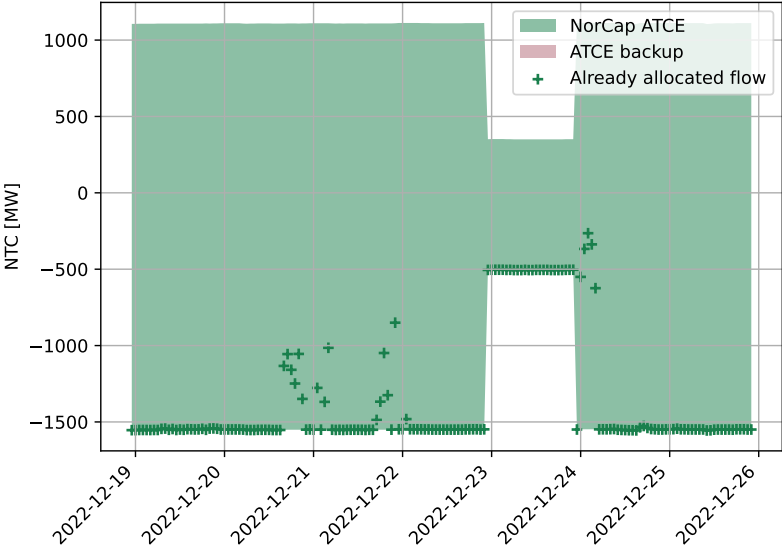


# FI-FI\_EL



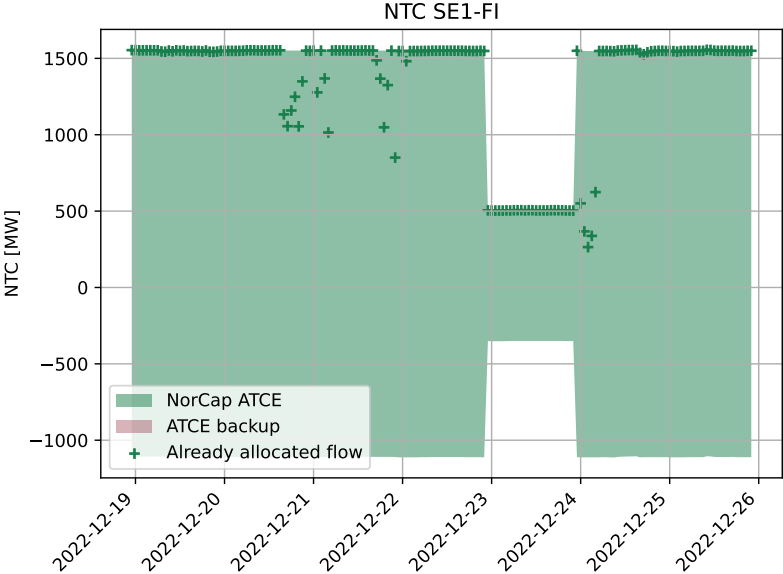
# FI-SE1

NTC FI-SE1



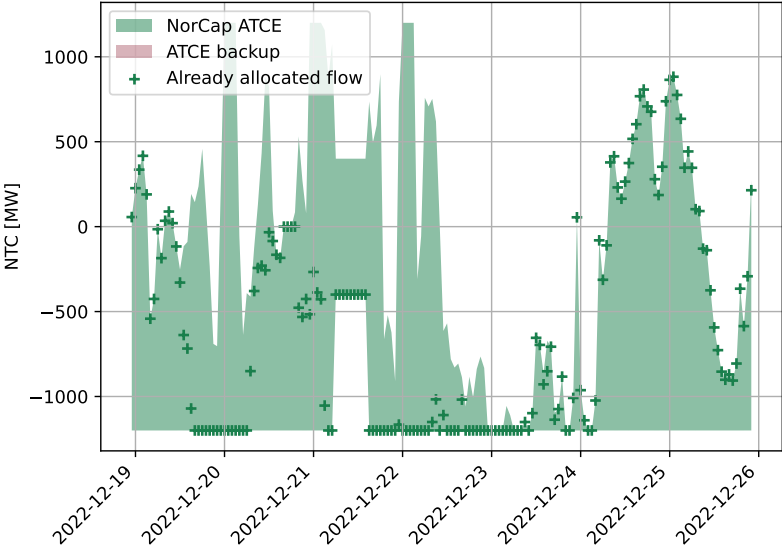


# SE1-FI

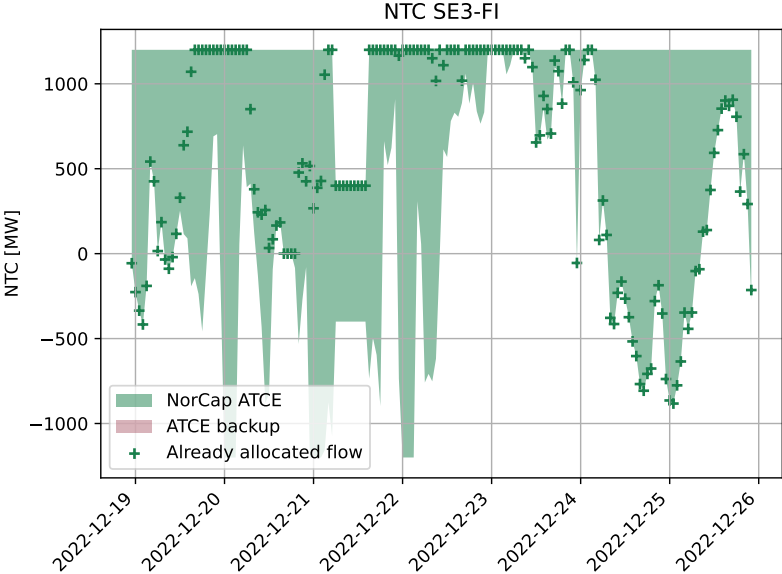


# FI-SE3

## NTC FI-SE3

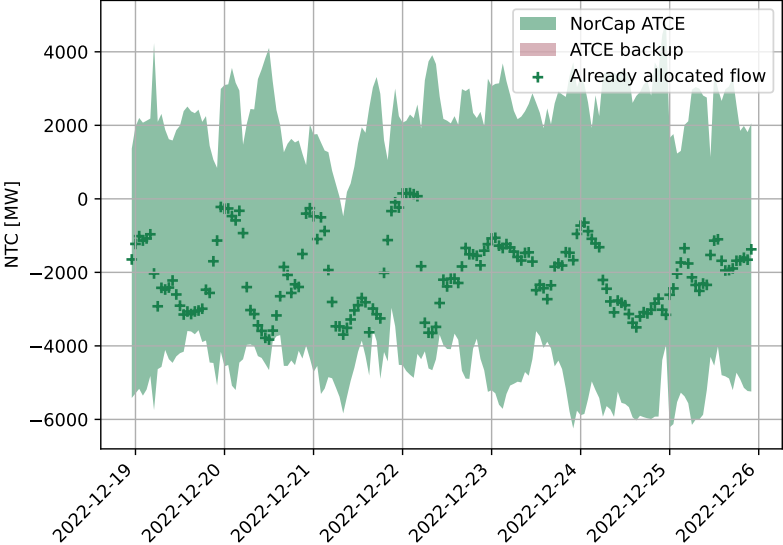


# SE3-FI



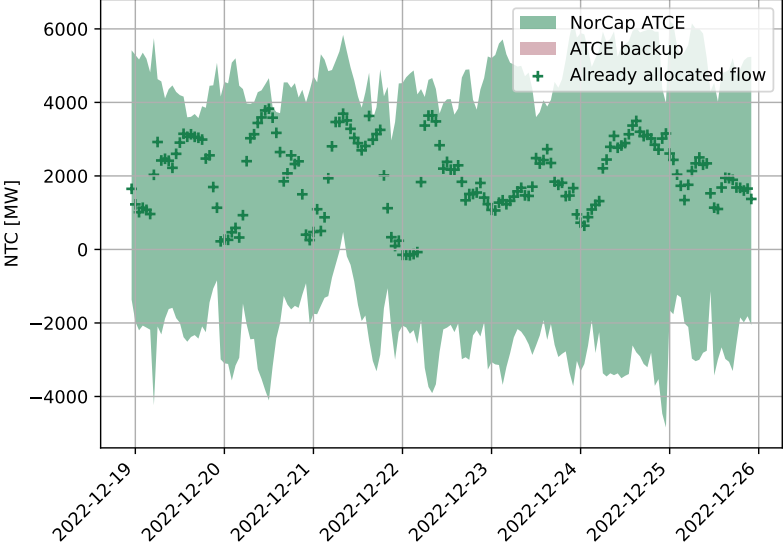
# NO1-NO1A

NTC NO1-NO1A



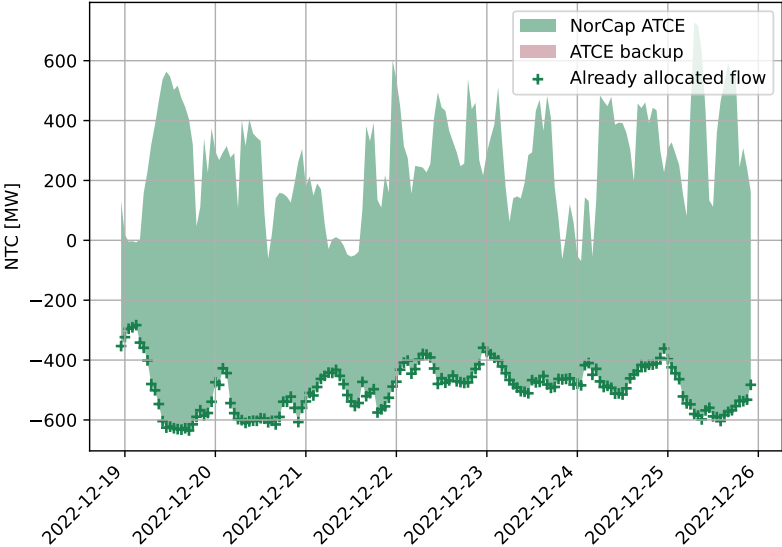
# NO1A-NO1

NTC NO1A-NO1



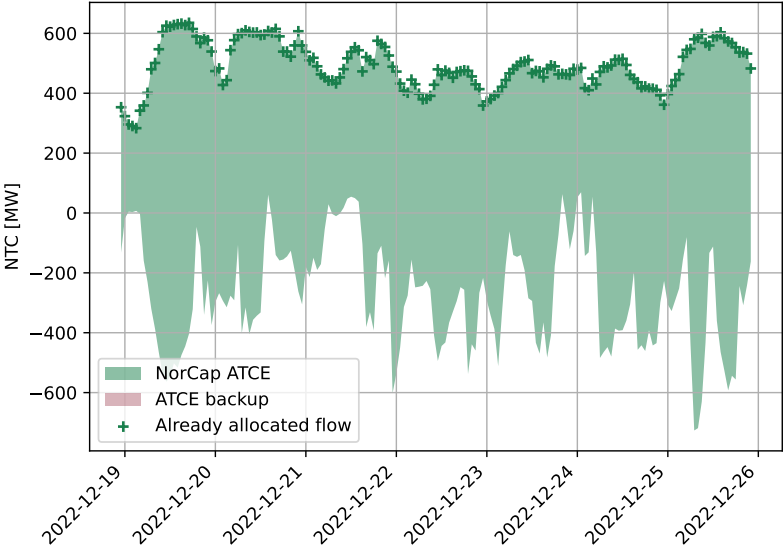
# NO1-NO3

## NTC NO1-NO3

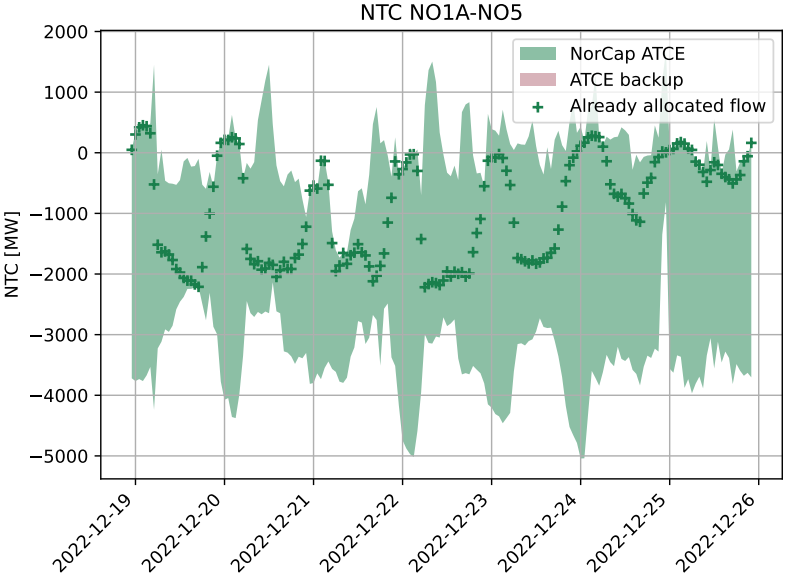


# NO3-NO1

## NTC NO3-NO1

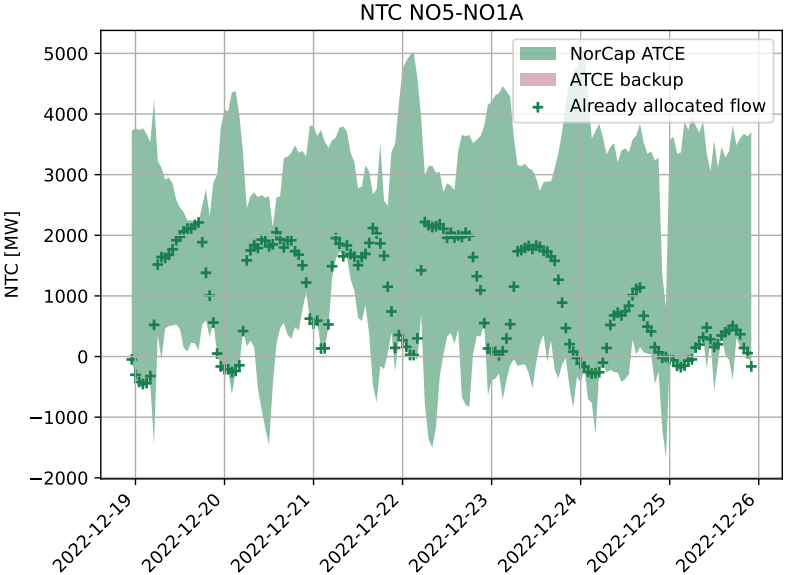


# NO1A-NO5



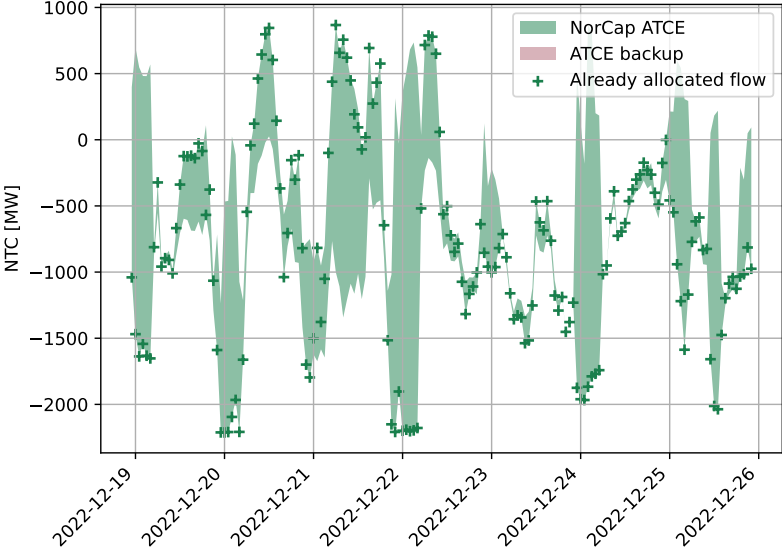


# NO5-NO1A



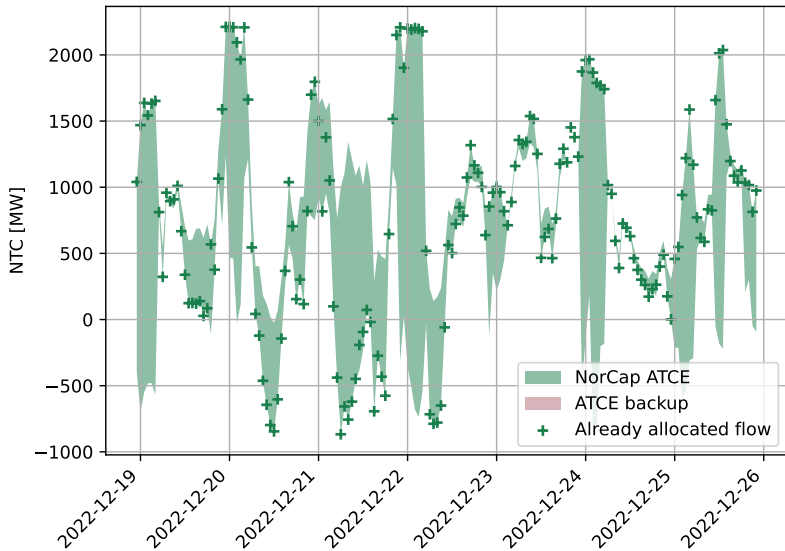
# NO1-SE3

## NTC NO1-SE3



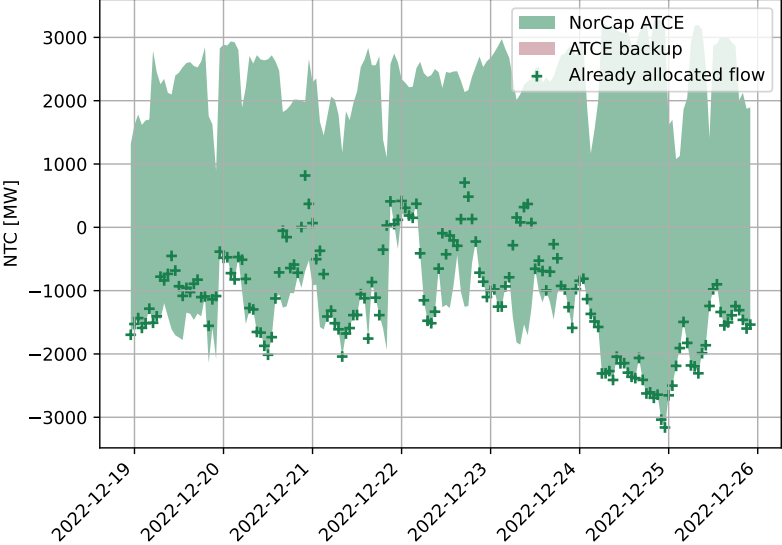
# SE3-NO1

## NTC SE3-NO1

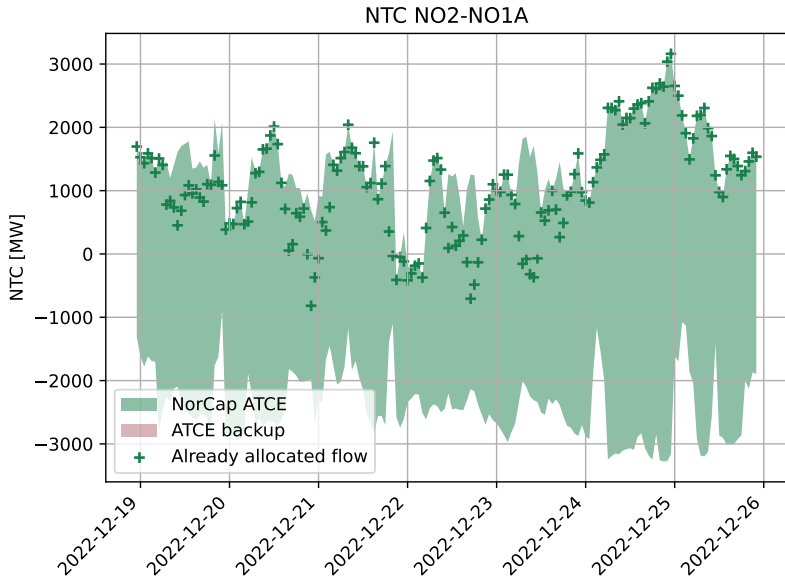


# NO1A-NO2

## NTC NO1A-NO2



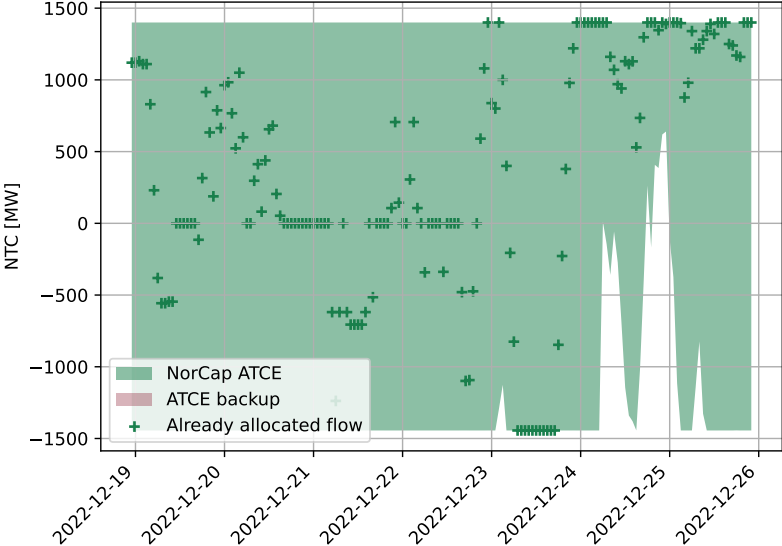
# NO2-NO1A





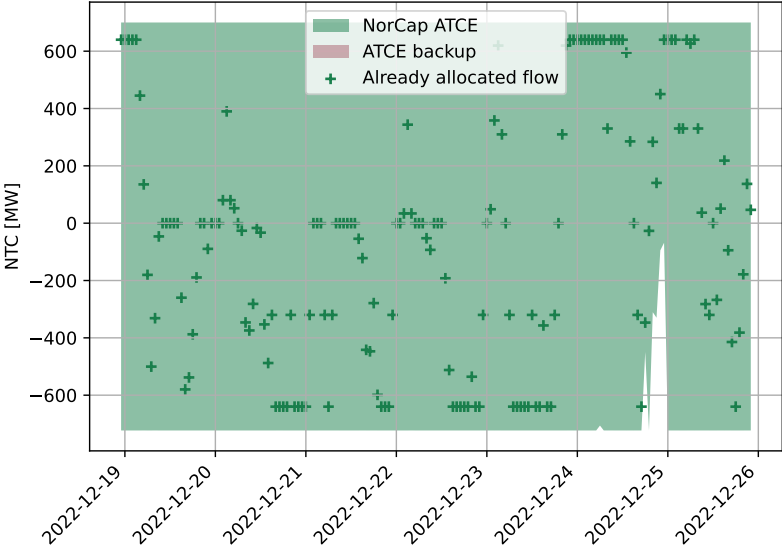
# NO2\_DE-NO2

NTC NO2\_DE-NO2



# NO2\_ND-NO2

NTC NO2\_ND-NO2

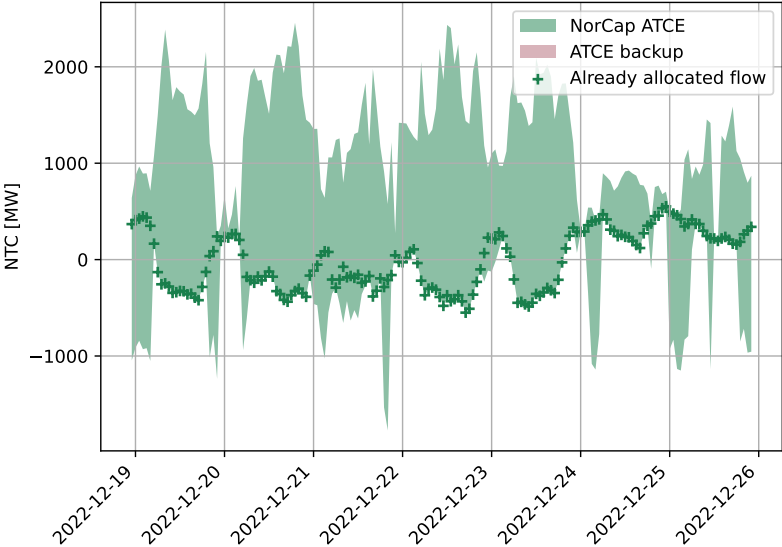






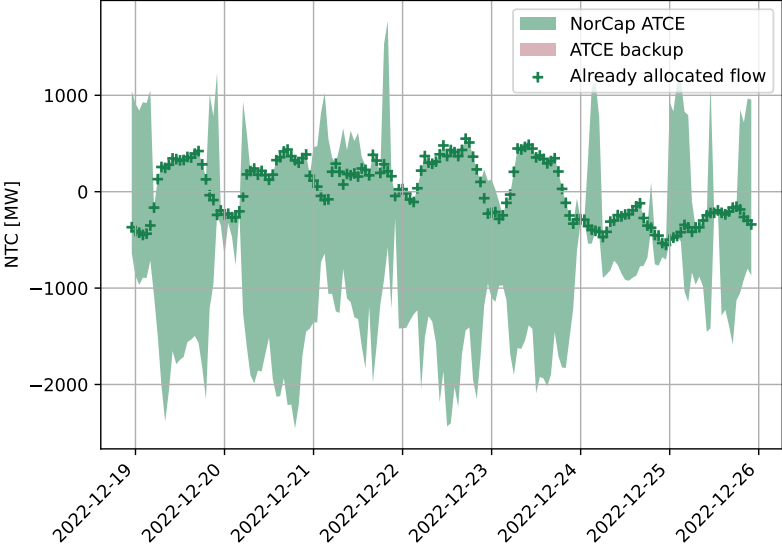
# NO2-NO5

NTC NO2-NO5



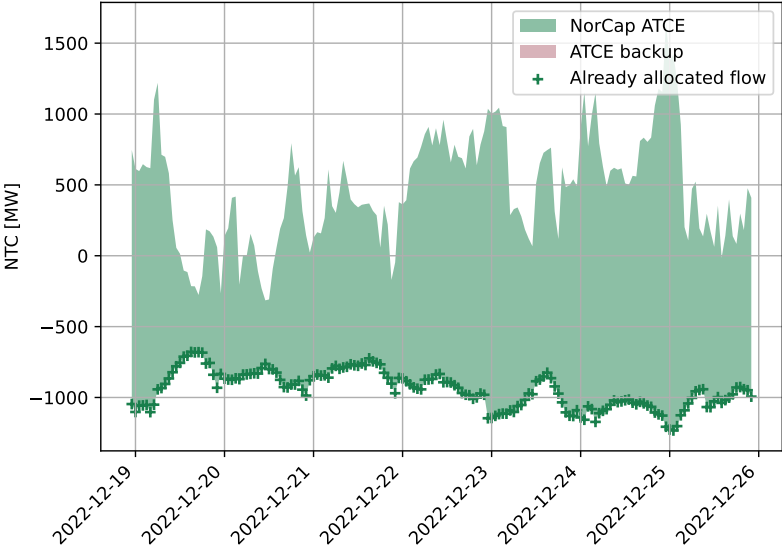
# NO5-NO2

NTC NO5-NO2



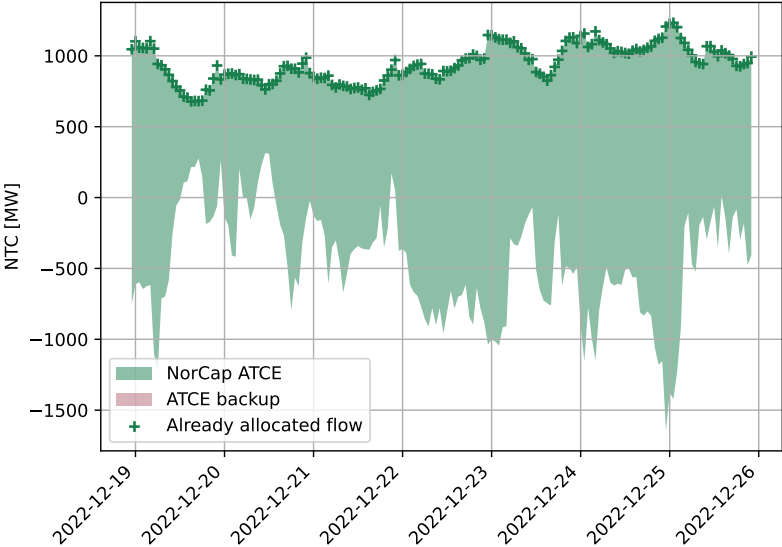
# NO3-NO4

## NTC NO3-NO4



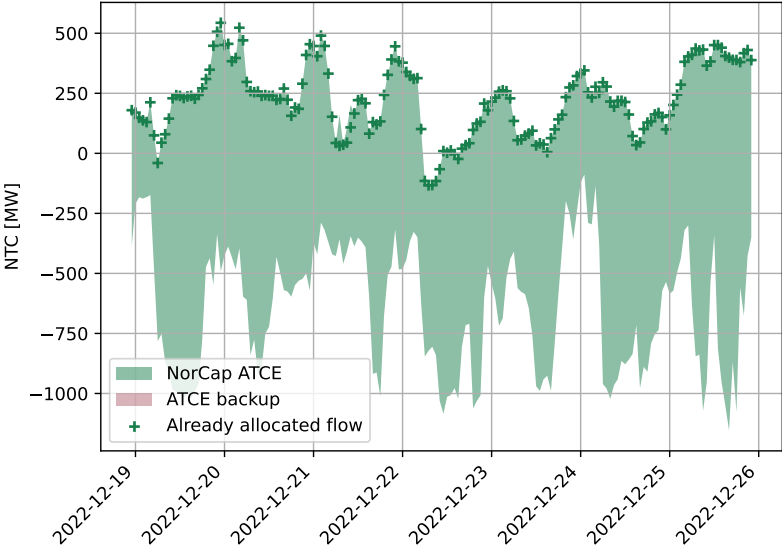
# NO4-NO3

## NTC NO4-NO3



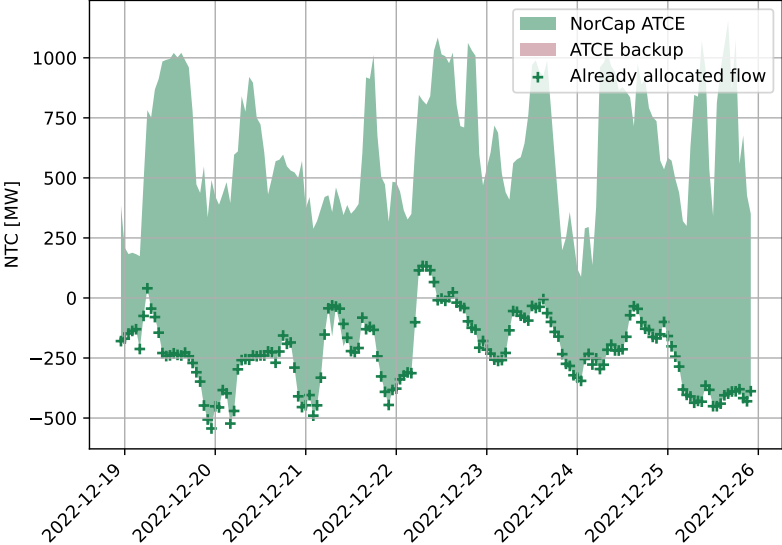
# NO3-NO5

## NTC NO3-NO5



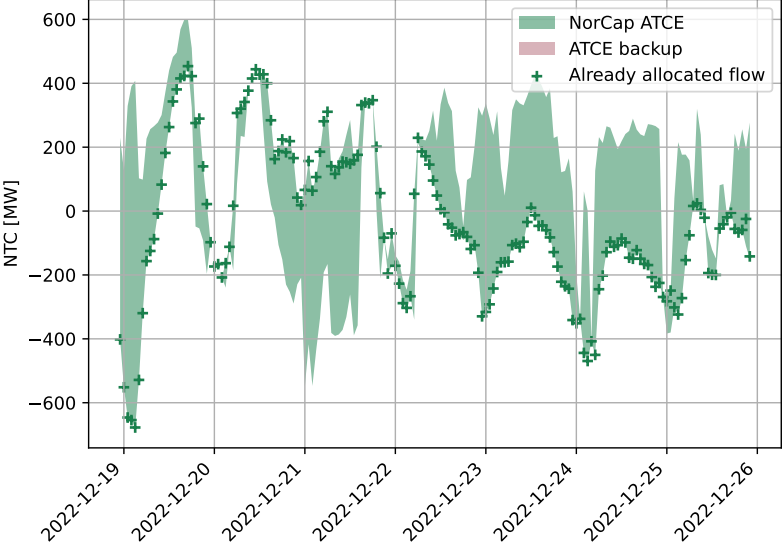
# NO5-NO3

## NTC NO5-NO3



# NO3-SE2

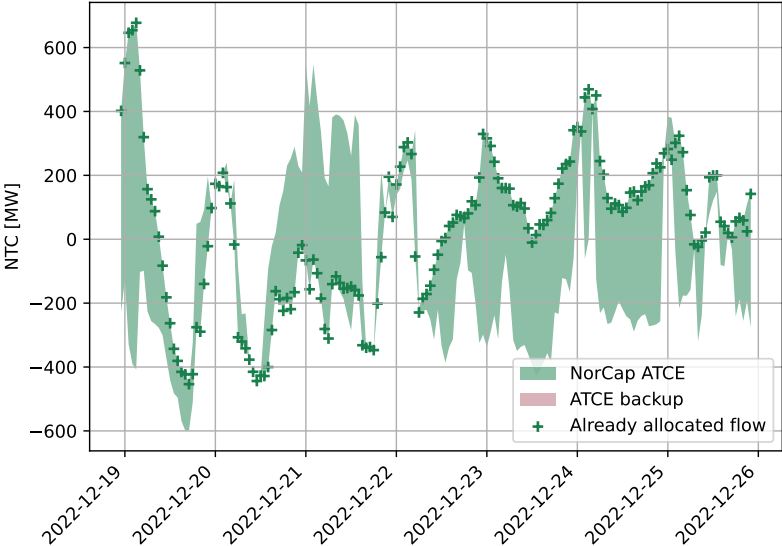
## NTC NO3-SE2





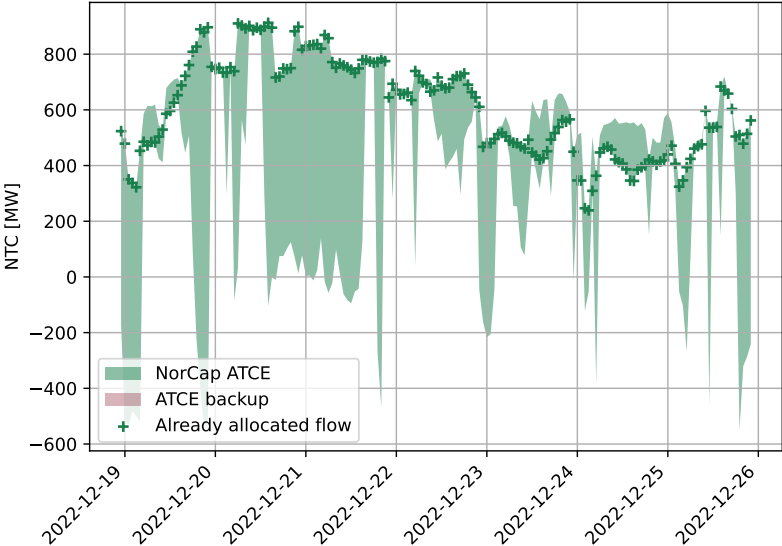
# SE2-NO3

## NTC SE2-NO3



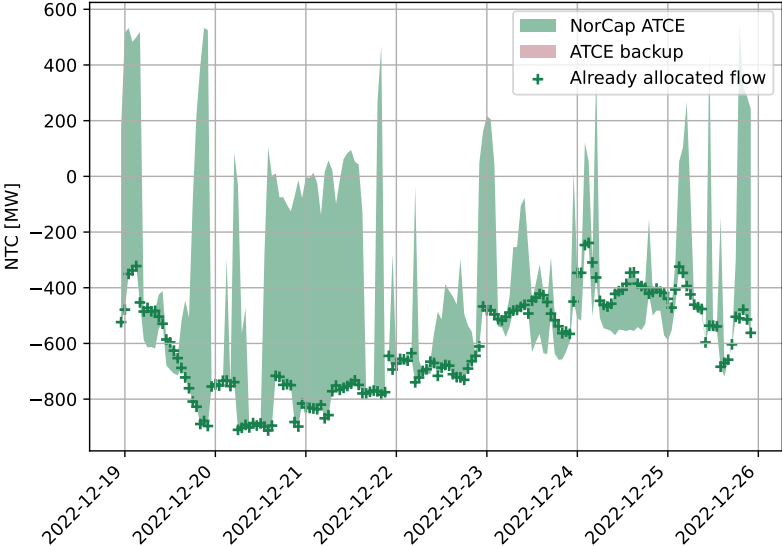
# NO4-SE1

## NTC NO4-SE1



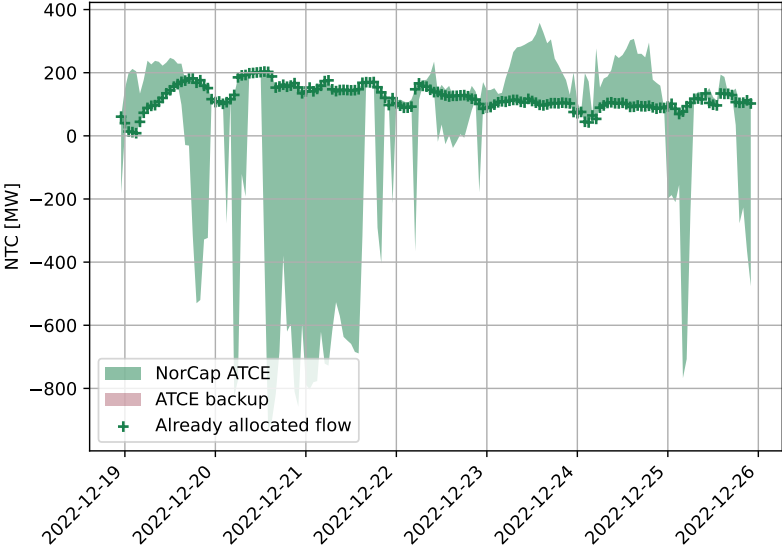
# SE1-NO4

## NTC SE1-NO4



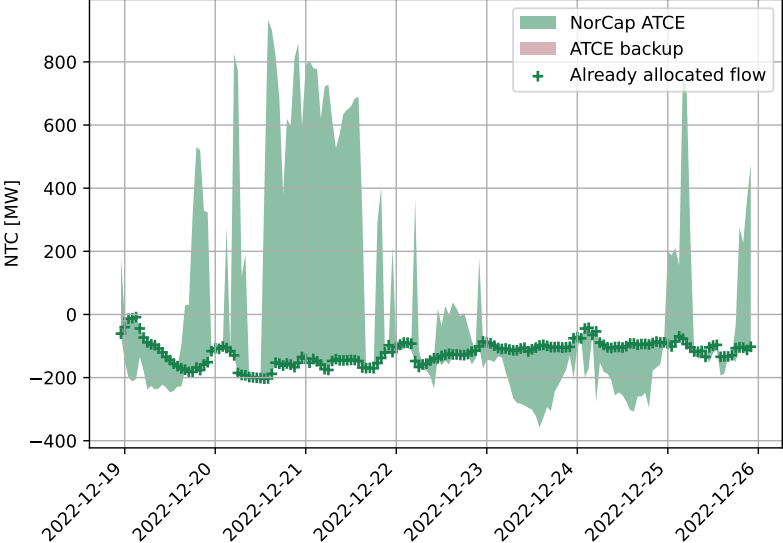
# NO4-SE2

## NTC NO4-SE2



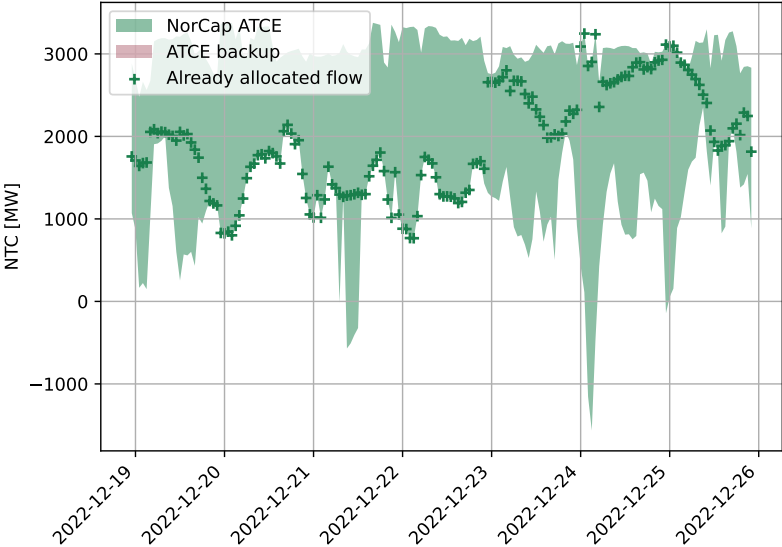
# SE2-NO4

## NTC SE2-NO4



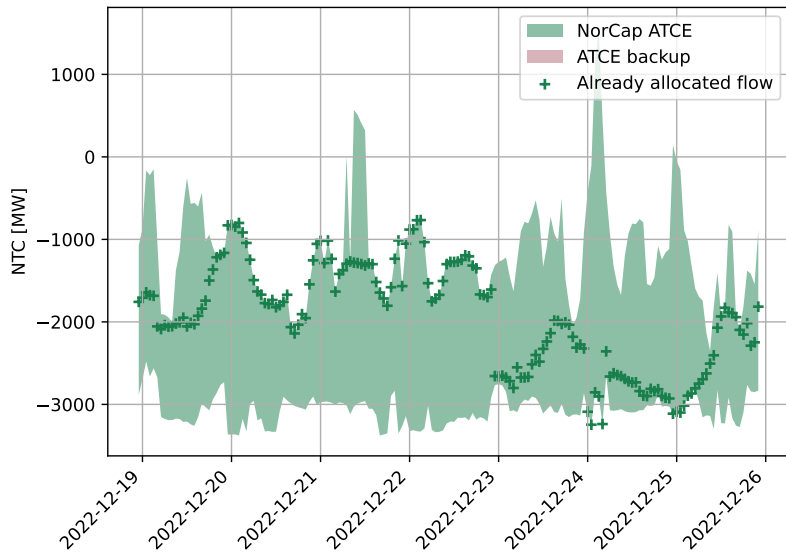
# SE1-SE2

## NTC SE1-SE2

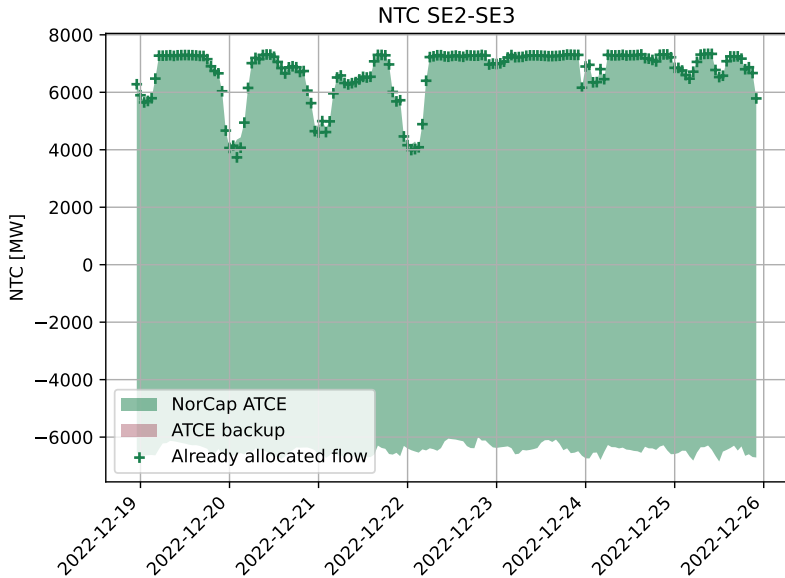


# SE2-SE1

## NTC SE2-SE1



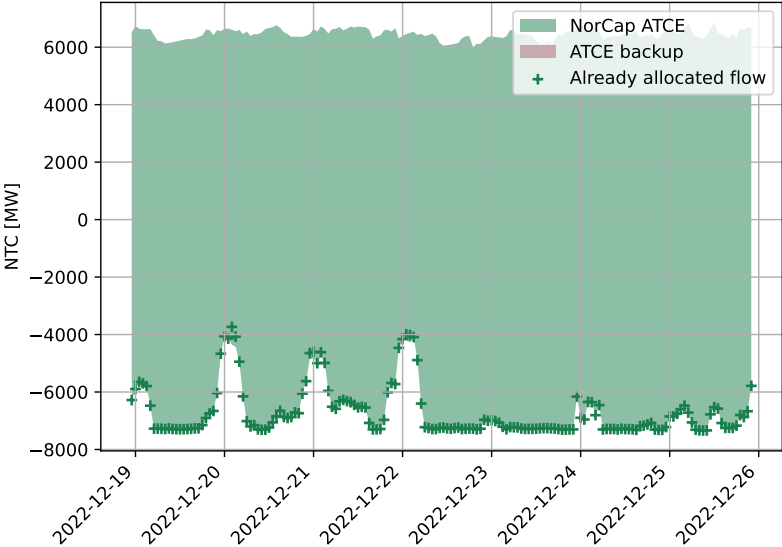
# SE2-SE3



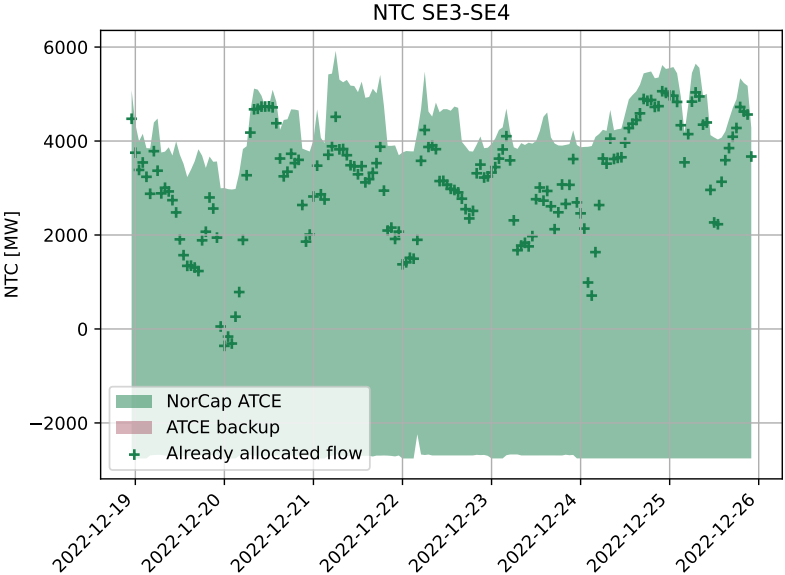


# SE3-SE2

## NTC SE3-SE2

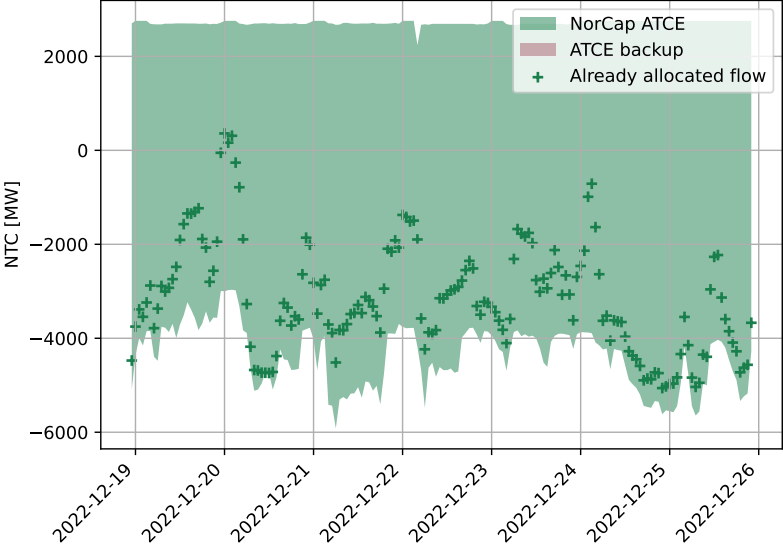


# SE3-SE4



# SE4-SE3

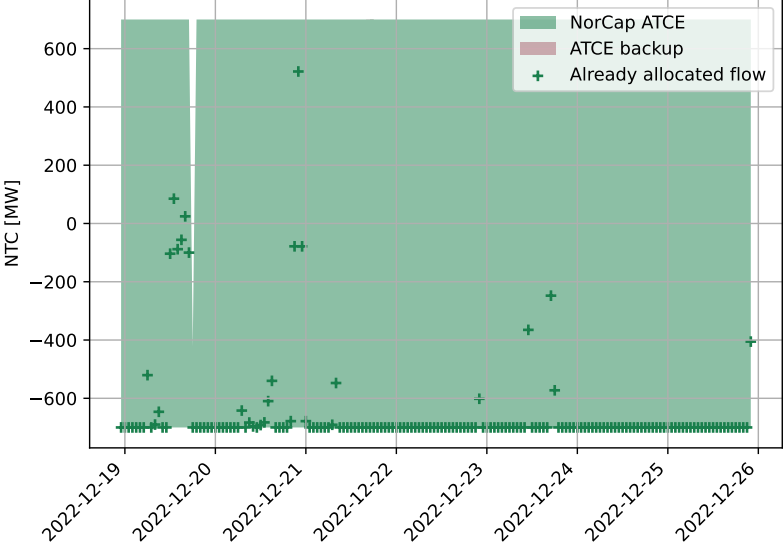
## NTC SE4-SE3





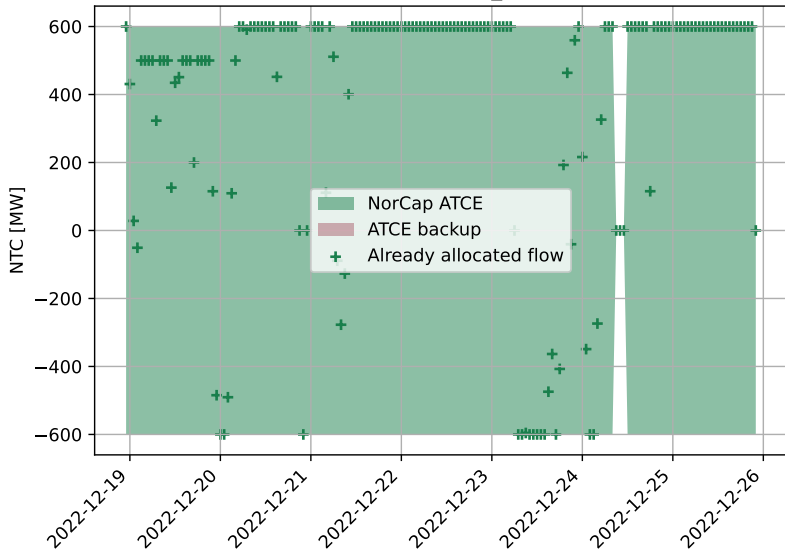
# SE4\_NB-SE4

NTC SE4\_NB-SE4



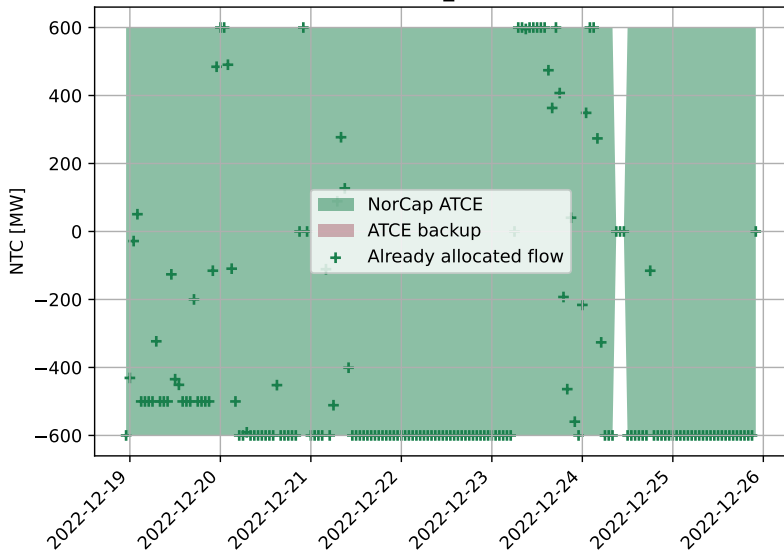
# SE4-SE4\_SP

## NTC SE4-SE4\_SP



# SE4\_SP-SE4

## NTC SE4\_SP-SE4



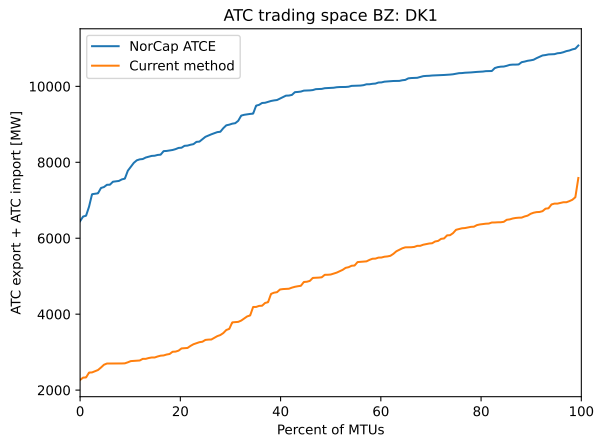
# Bidding zone trading space

The total trading space of a bidding zone for a given MTU is the sum of export capacity and import capacity on all borders of that bidding zone for that MTU. The directional trading space is the sum of ATC on all borders of a bidding zone in either exporting or importing direction.

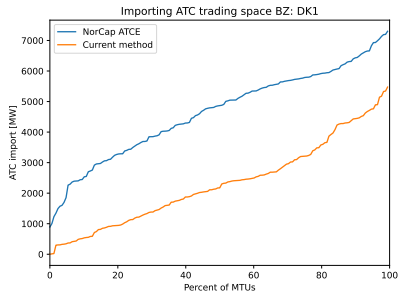
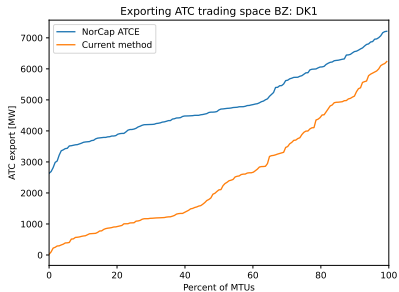
Disclaimer: Trading space computed by the reference method (i.e. the current method used in production) are calculated from intra-day offered ATCs collected from ENTSO-e transparency platform. It must be noted that the capacities collected at transparency platform include ramping constraints for some HVDCs connecting the Nordic and external CCRs.



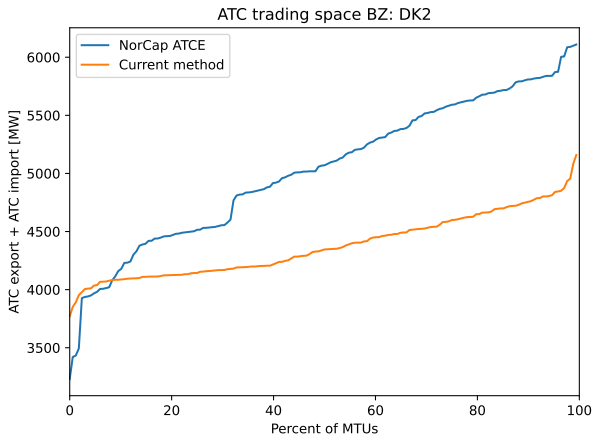
# DK1 - Total trading space



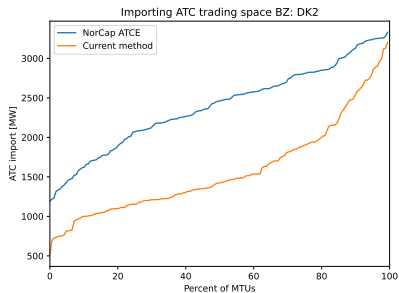
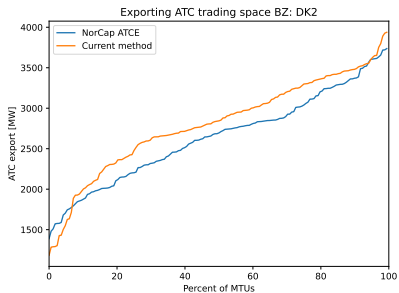
# DK1 - Directional trading space



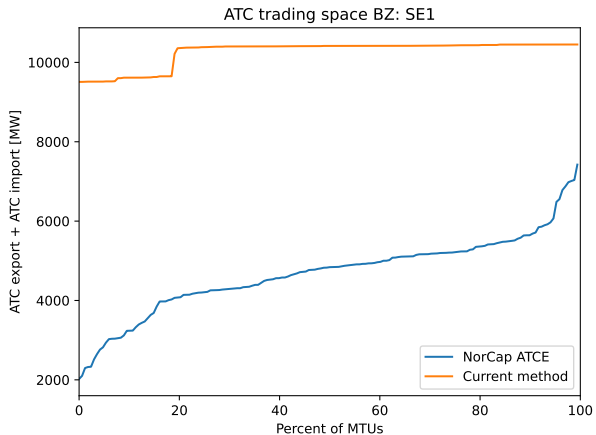
# DK2 - Total trading space



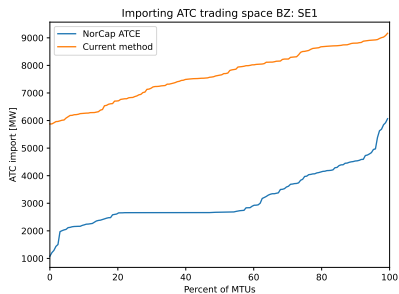
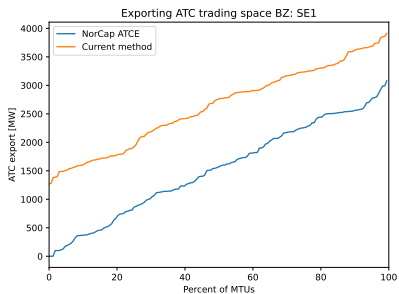
# DK2 - Directional trading space



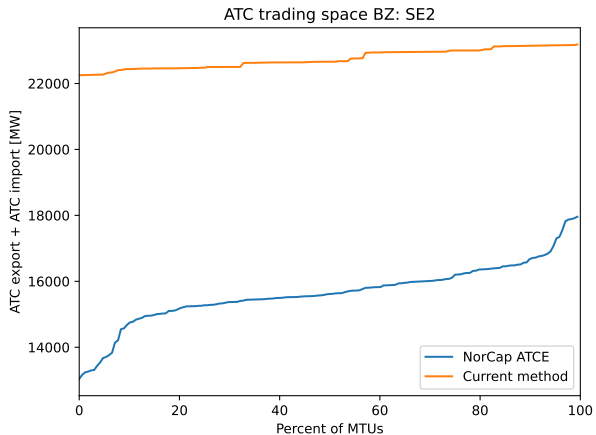
# SE1 - Total trading space



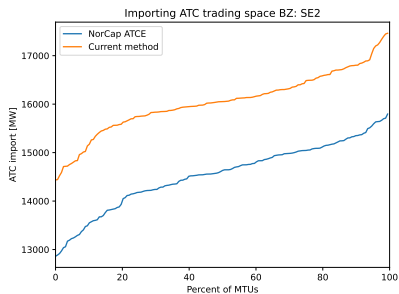
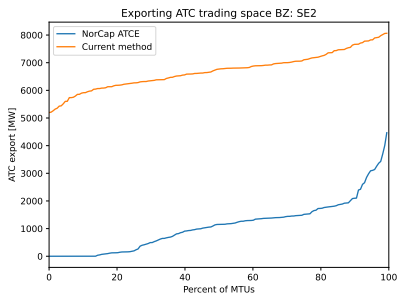
# SE1 - Directional trading space



# SE2 - Total trading space

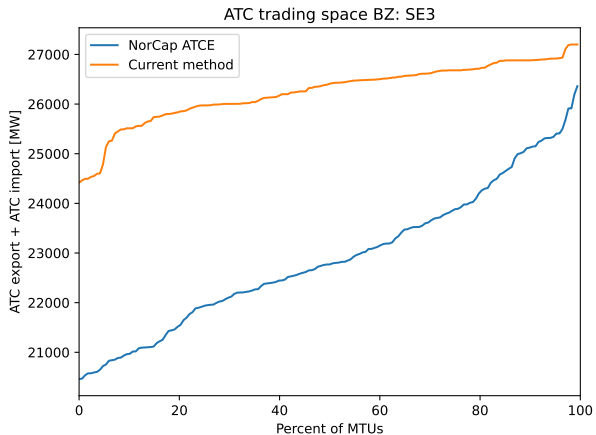


# SE2 - Directional trading space

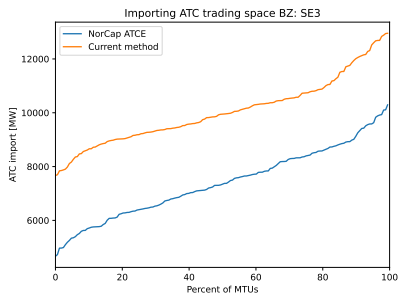
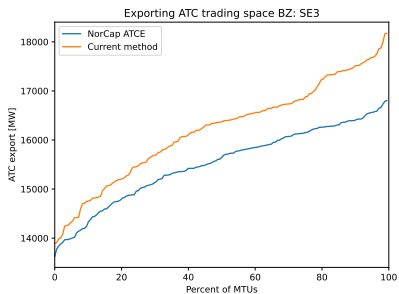




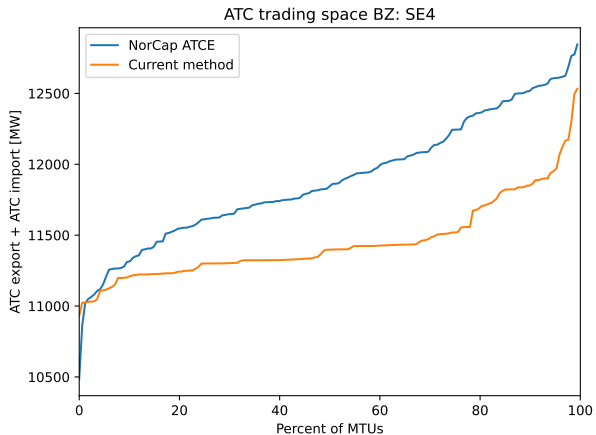
# SE3 - Total trading space



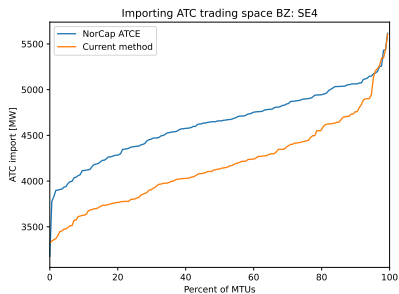
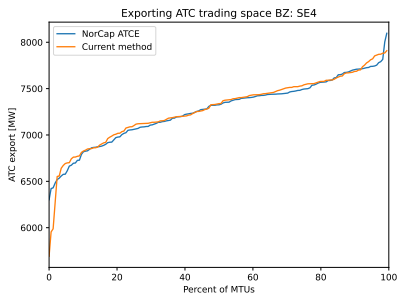
# SE3 - Directional trading space



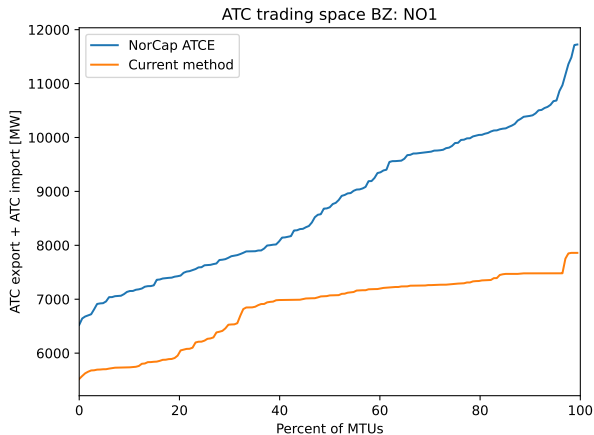
# SE4 - Total trading space



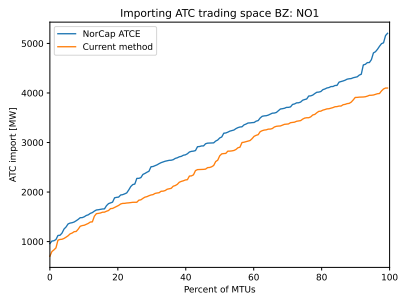
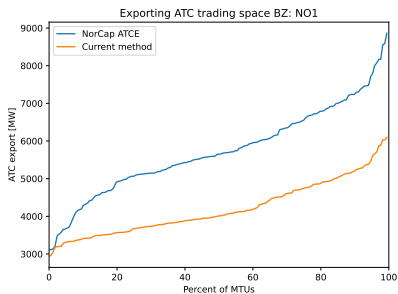
# SE4 - Directional trading space



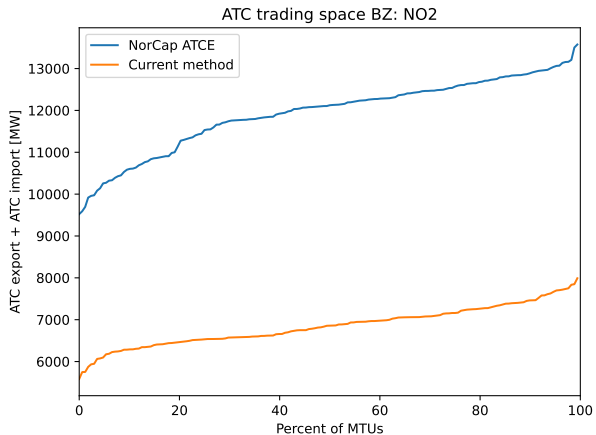
# NO1 - Total trading space



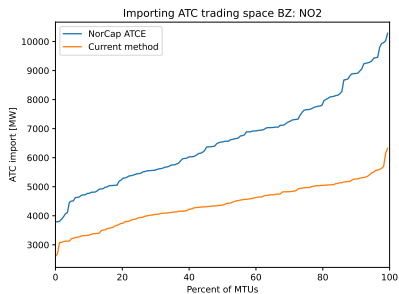
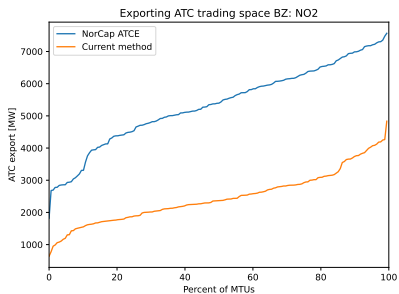
# NO1 - Directional trading space



# NO2 - Total trading space

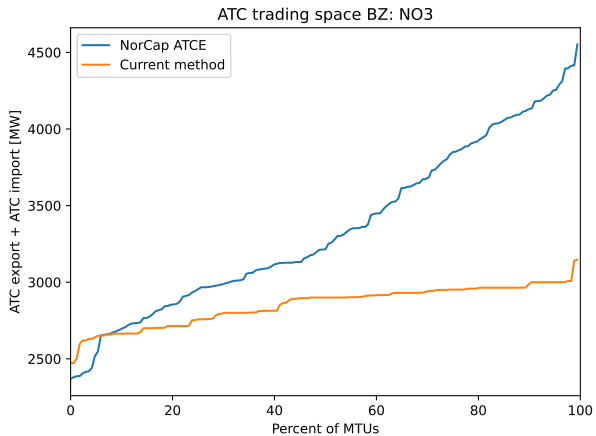


# NO2 - Directional trading space

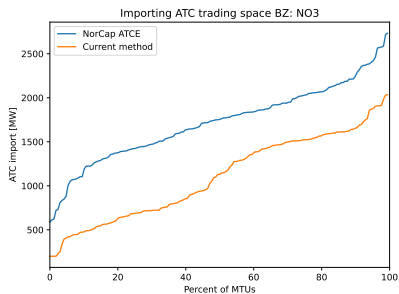
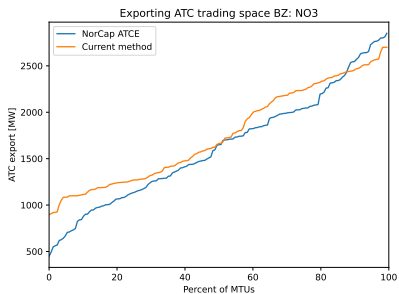




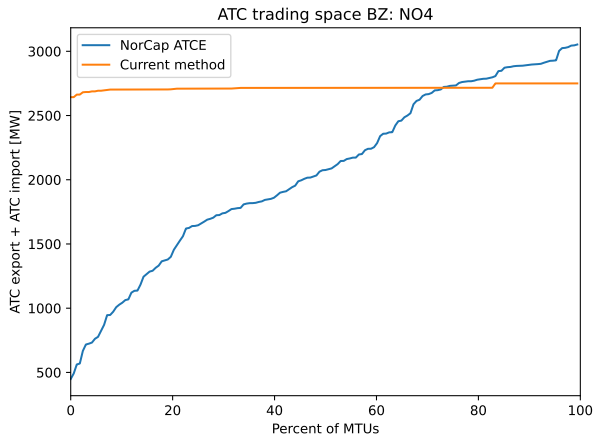
# NO3 - Total trading space



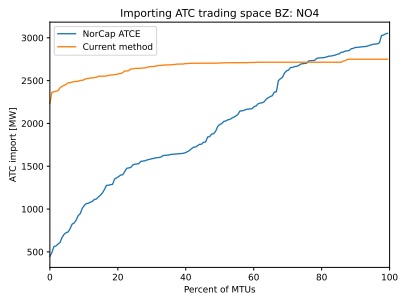
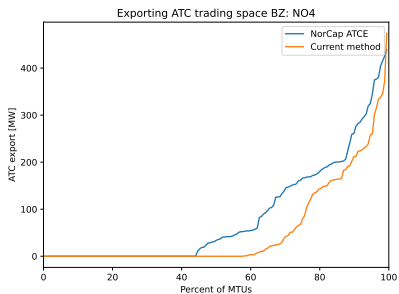
# NO3 - Directional trading space



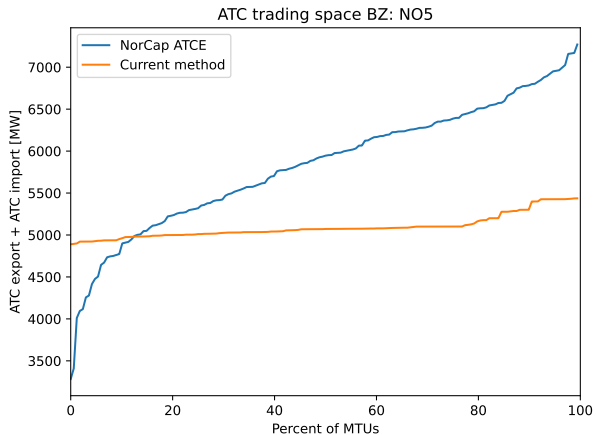
# NO4 - Total trading space



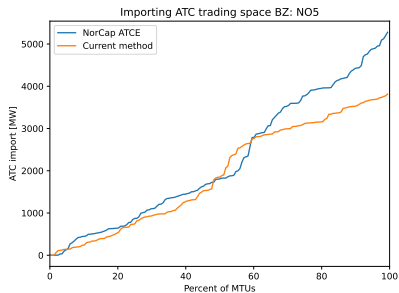
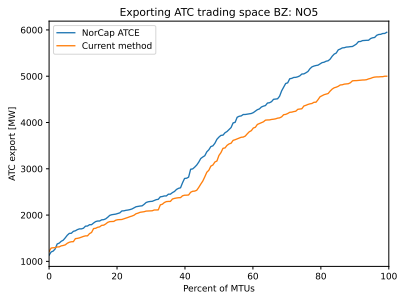
# NO4 - Directional trading space



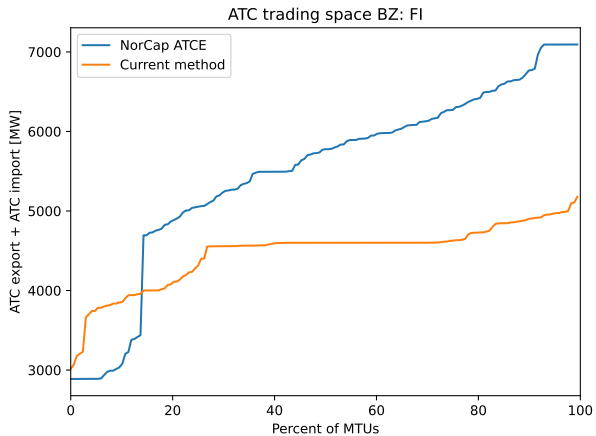
# NO5 - Total trading space



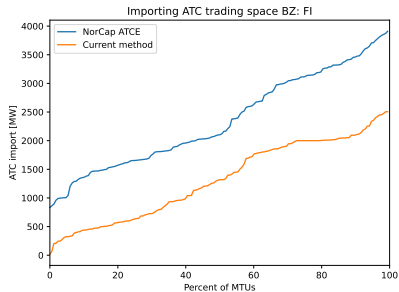
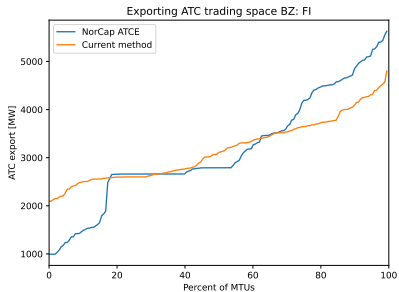
# NO5 - Directional trading space



# FI - Total trading space



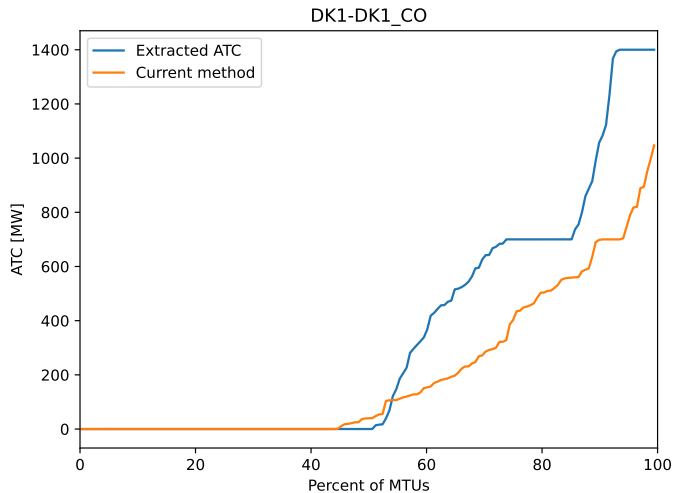
# FI - Directional trading space



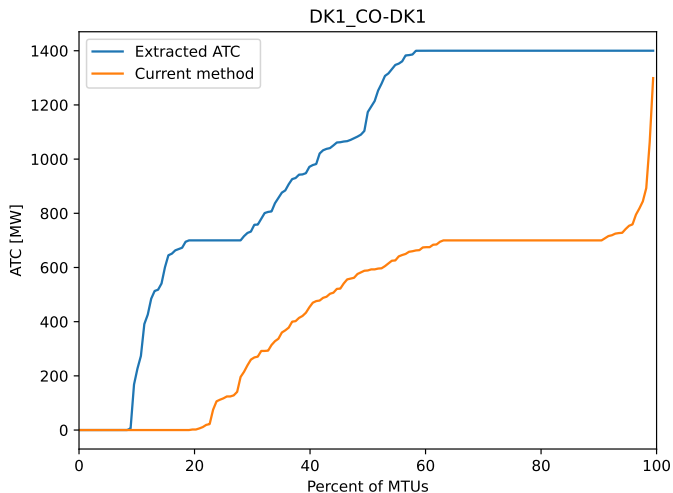


# Capacity duration curves

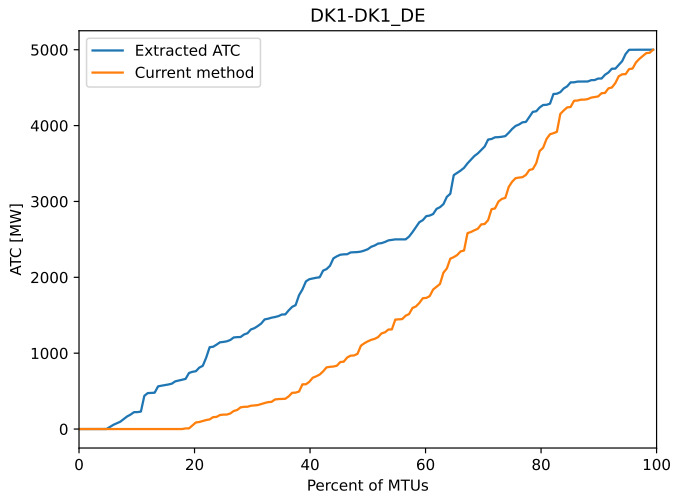
# DK1-DK1\_CO ATC duration curves



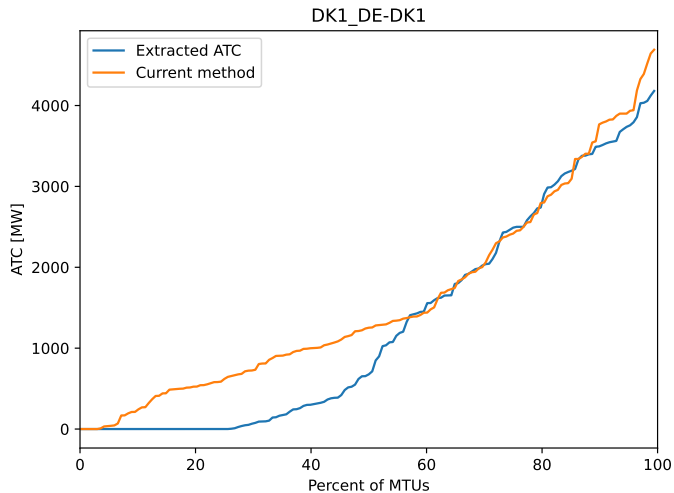
# DK1\_CO-DK1 ATC duration curves



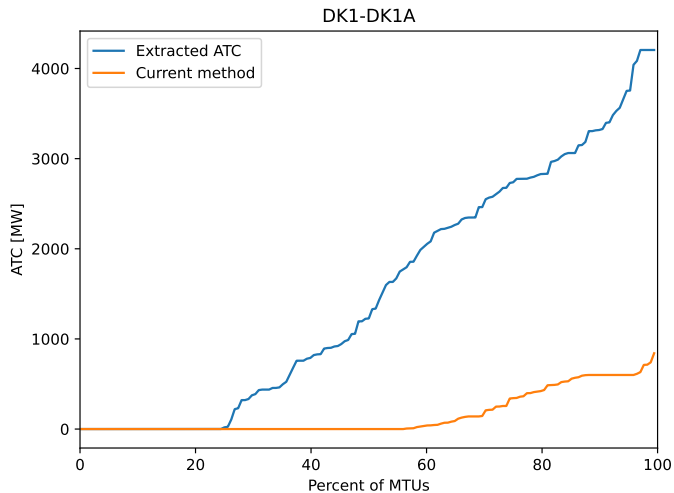
# DK1-DK1\_DE ATC duration curves



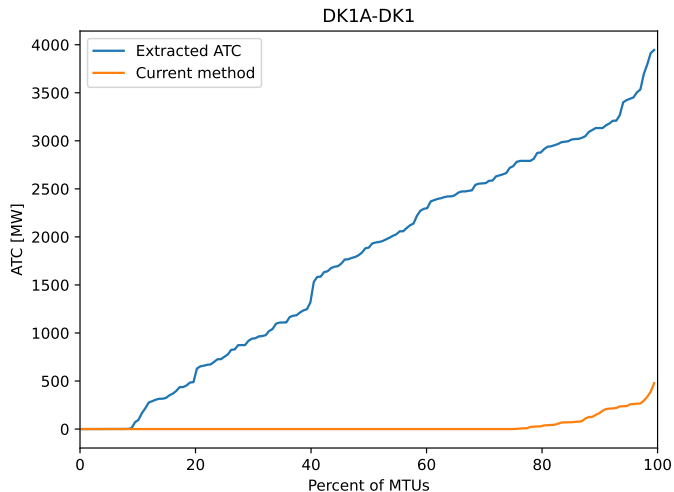
# DK1\_DE-DK1 ATC duration curves



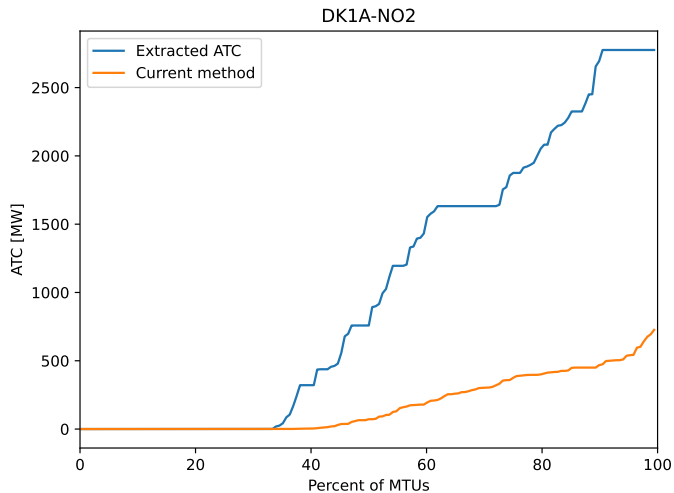
# DK1-DK1A ATC duration curves



# DK1A-DK1 ATC duration curves

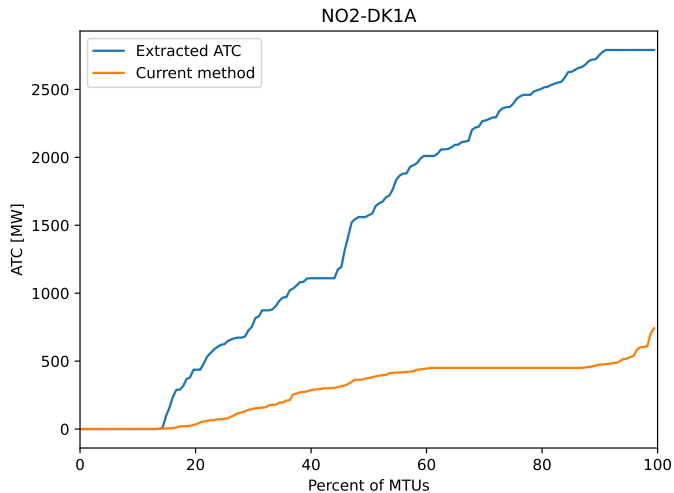


# DK1A-NO2 ATC duration curves

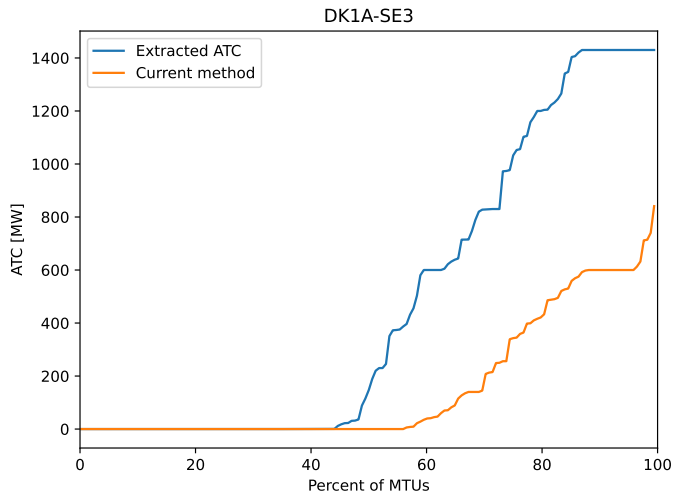




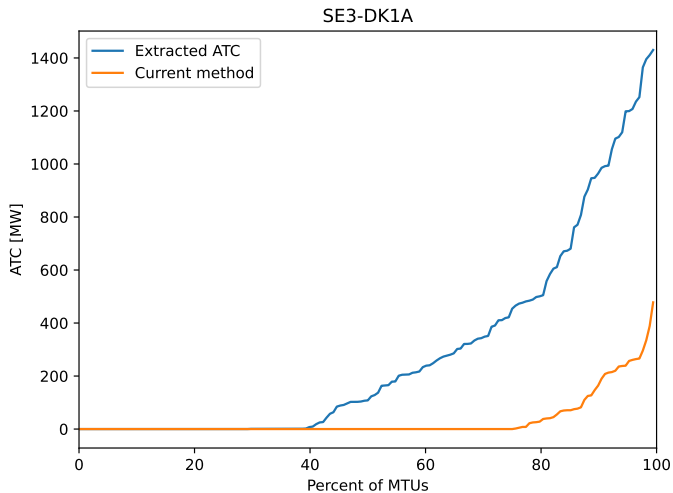
# NO2-DK1A ATC duration curves



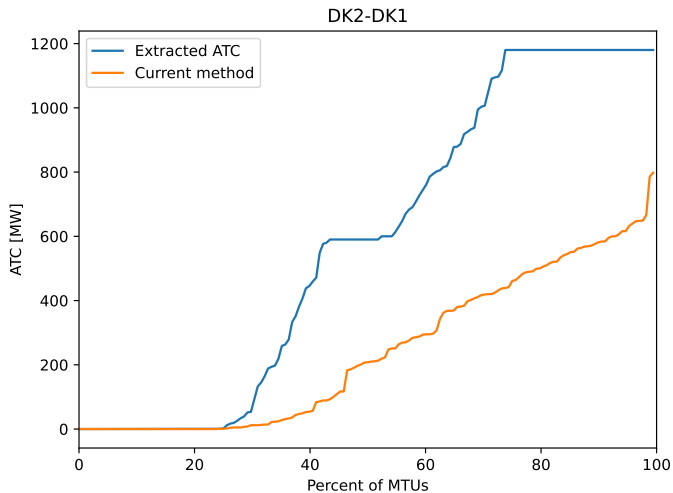
# DK1A-SE3 ATC duration curves



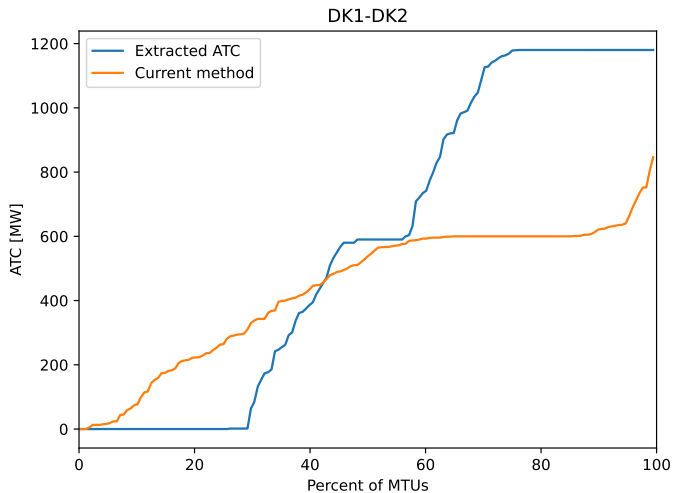
# SE3-DK1A ATC duration curves



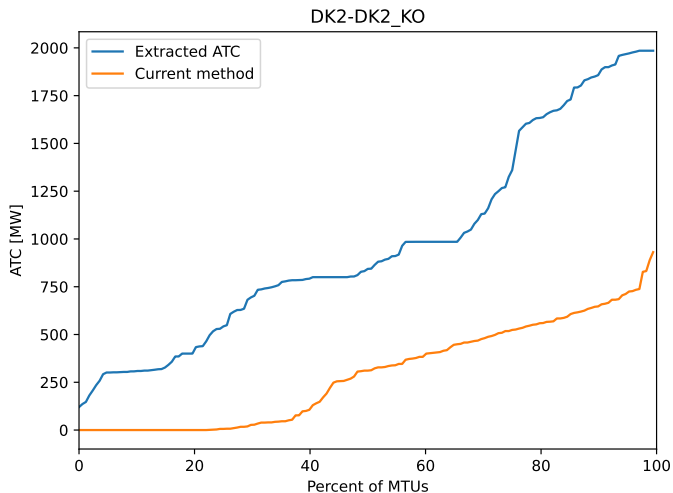
# DK2-DK1 ATC duration curves



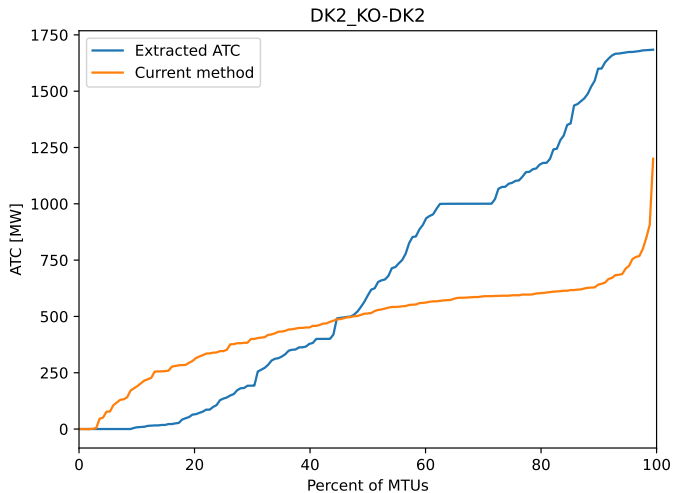
# DK1-DK2 ATC duration curves



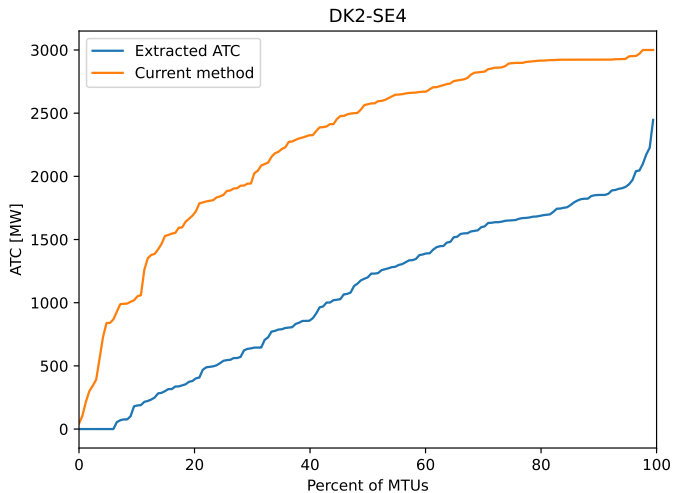
# DK2-DK2\_KO ATC duration curves



# DK2\_KO-DK2 ATC duration curves

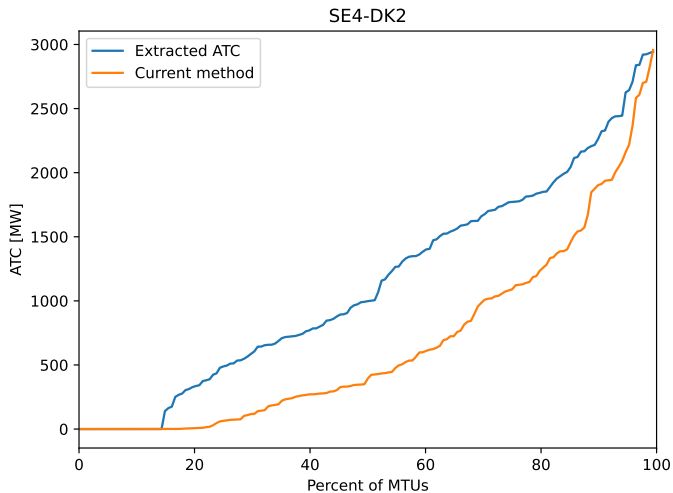


# DK2-SE4 ATC duration curves

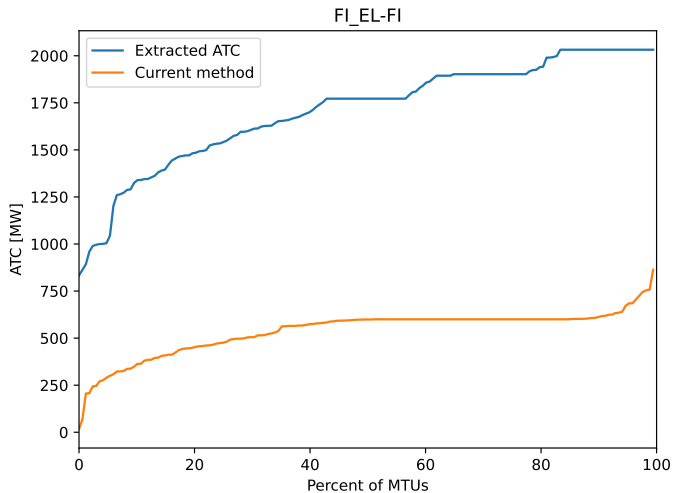




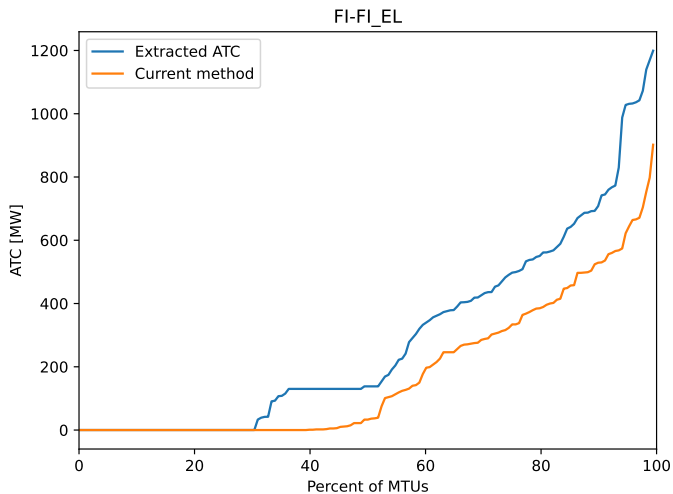
# SE4-DK2 ATC duration curves



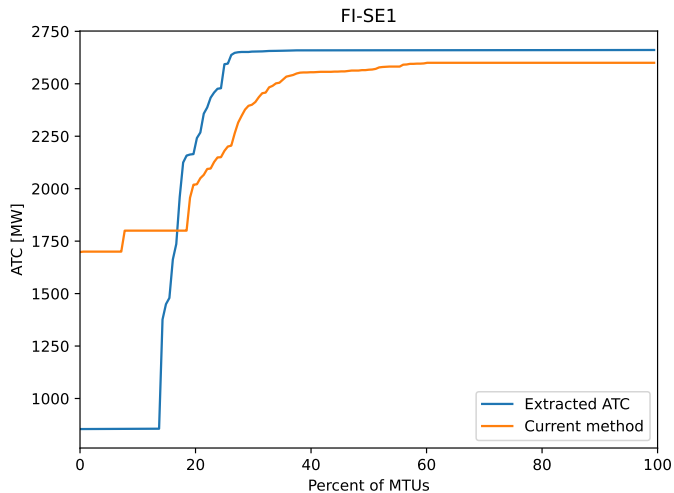
# FI\_EL-FI ATC duration curves



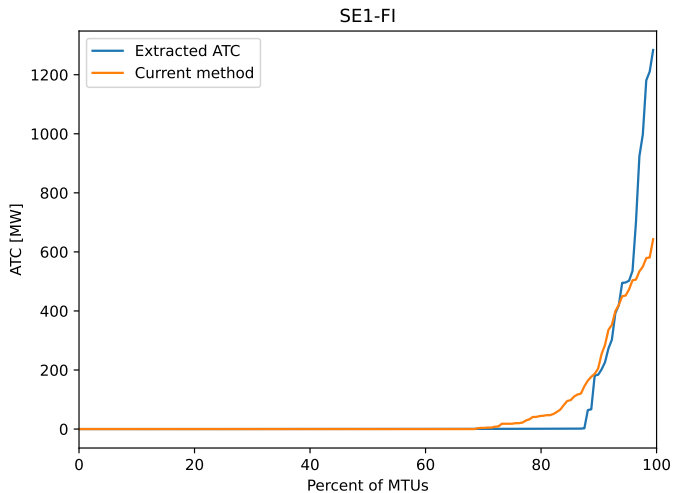
# FI-FI\_EL ATC duration curves



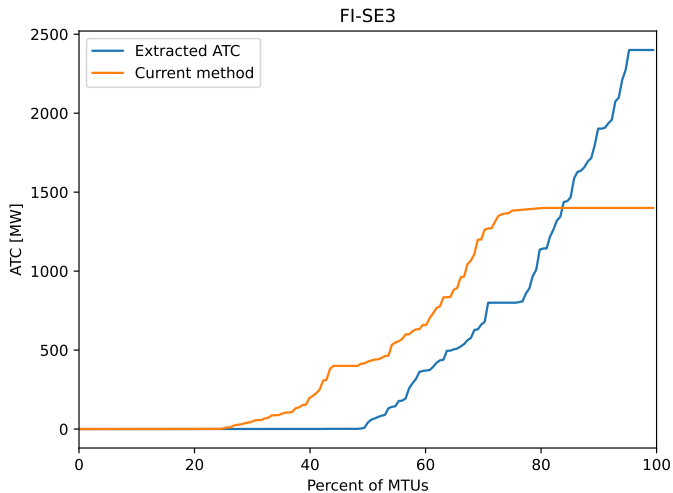
# FI-SE1 ATC duration curves



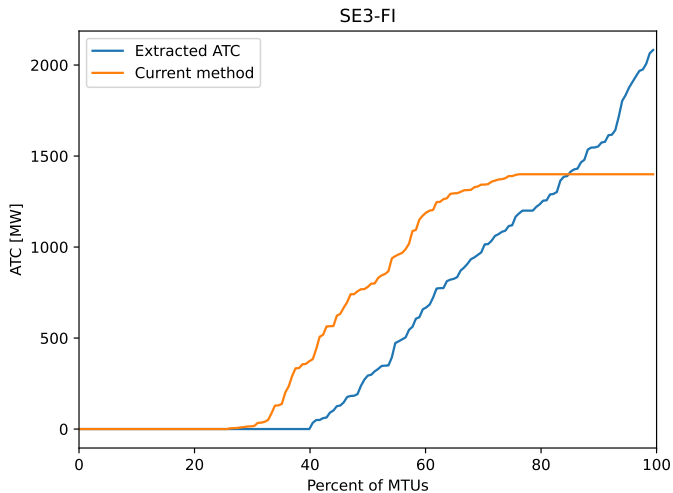
# SE1-FI ATC duration curves



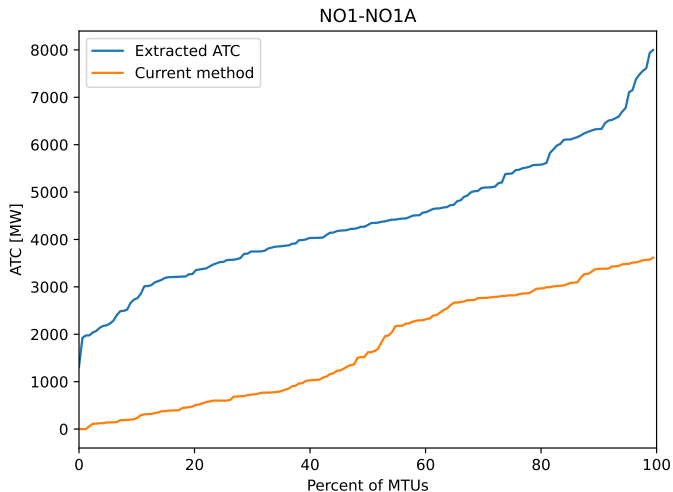
# FI-SE3 ATC duration curves



# SE3-FI ATC duration curves

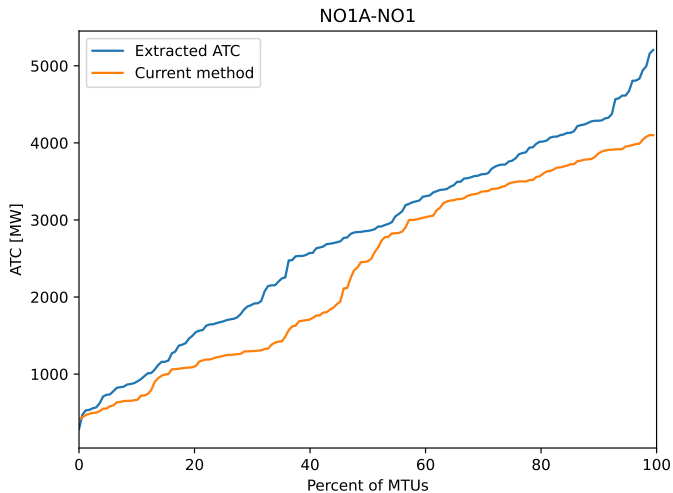


# NO1-NO1A ATC duration curves

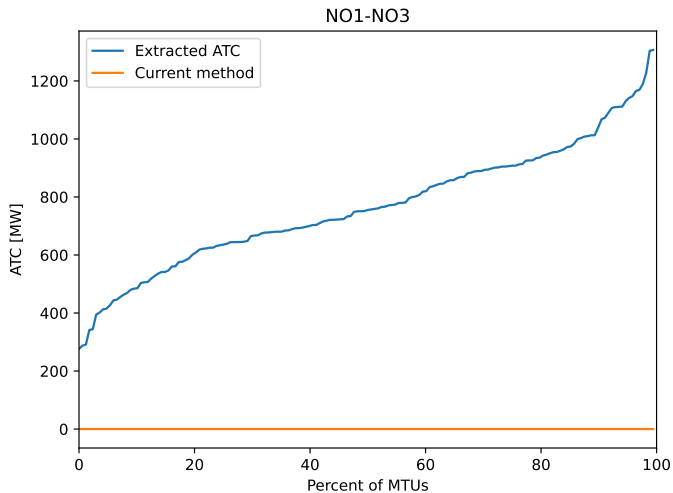




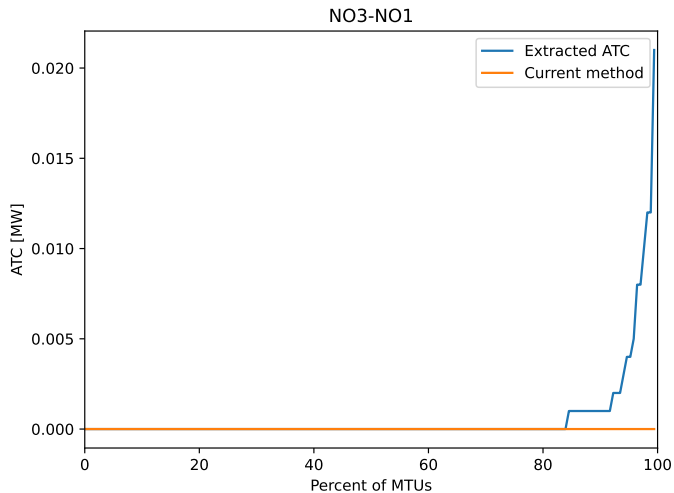
# NO1A-NO1 ATC duration curves



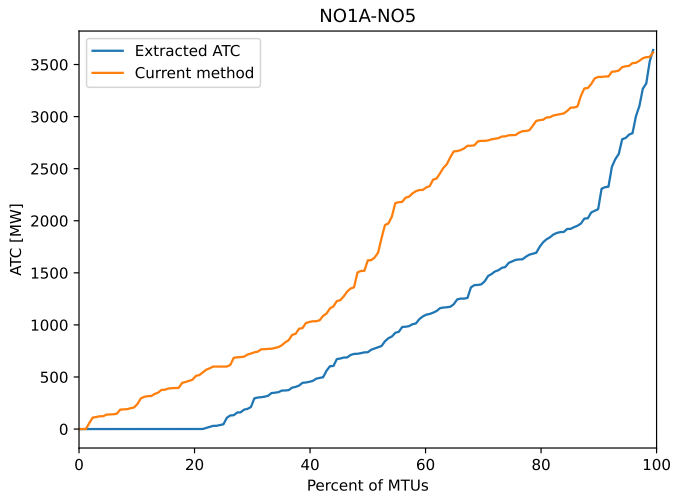
# NO1-NO3 ATC duration curves



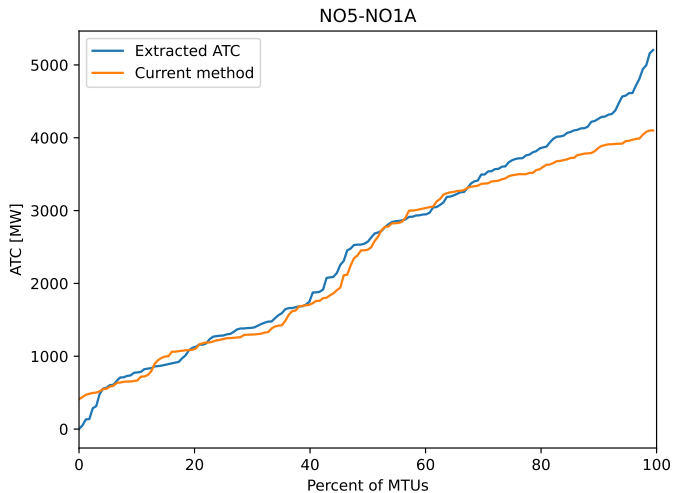
# NO3-NO1 ATC duration curves



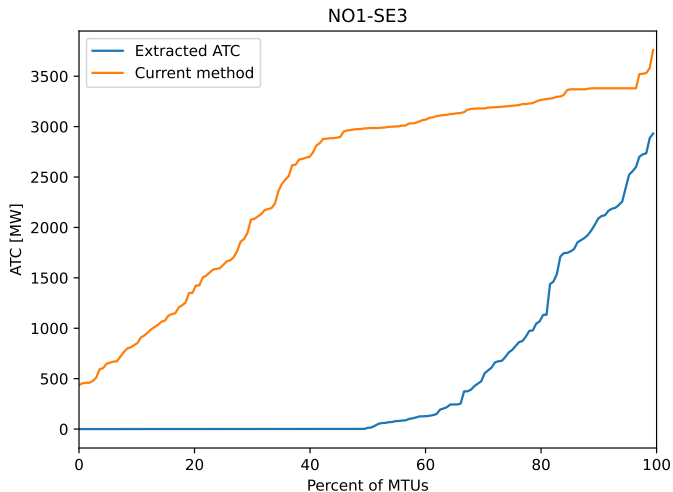
# NO1A-NO5 ATC duration curves



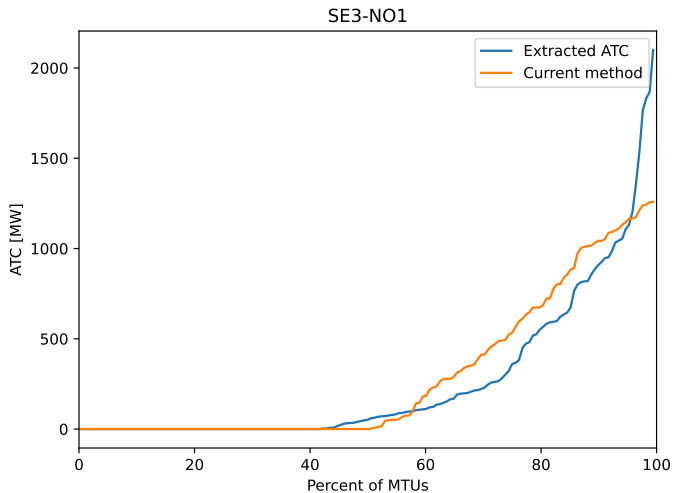
# NO5-NO1A ATC duration curves



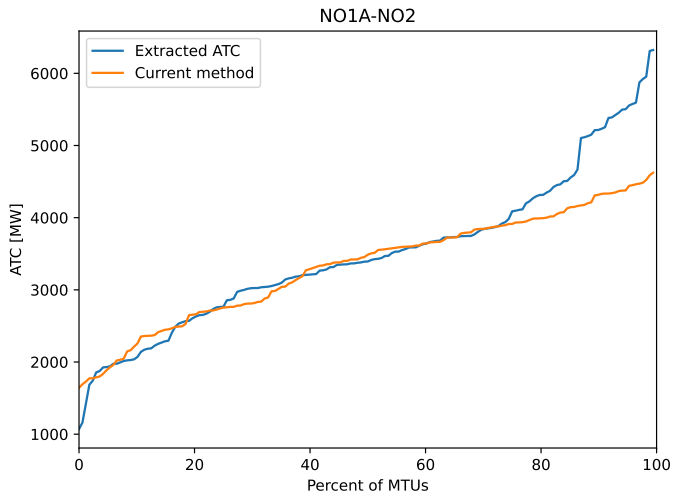
# NO1-SE3 ATC duration curves



# SE3-NO1 ATC duration curves

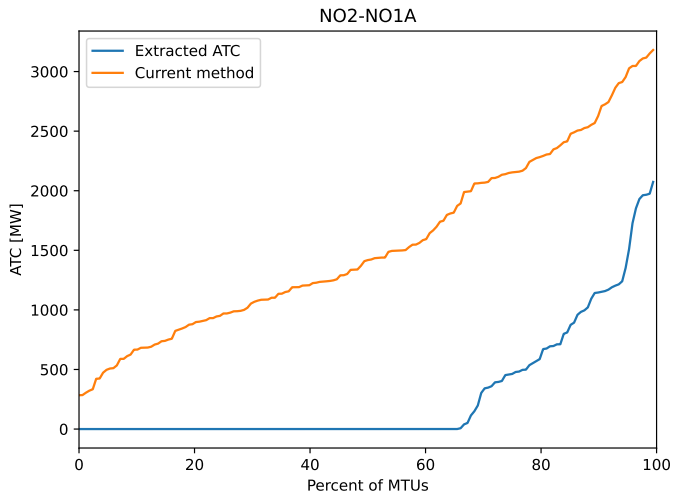


# NO1A-NO2 ATC duration curves

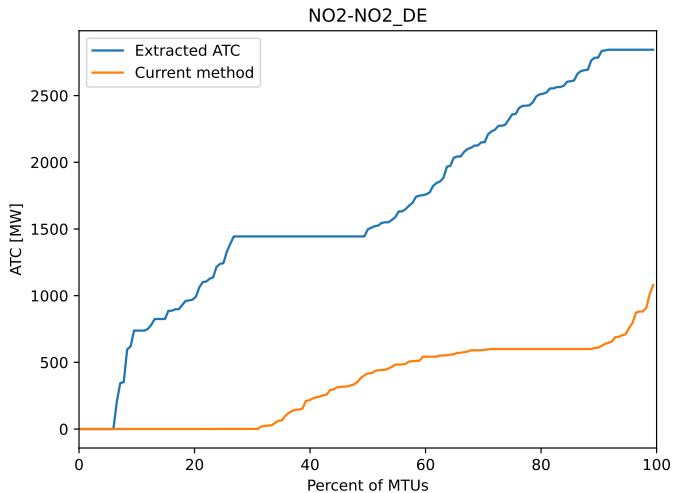




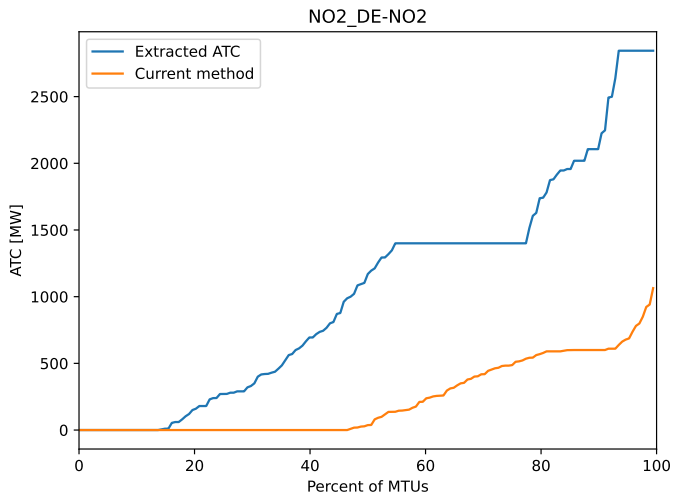
# NO2-NO1A ATC duration curves



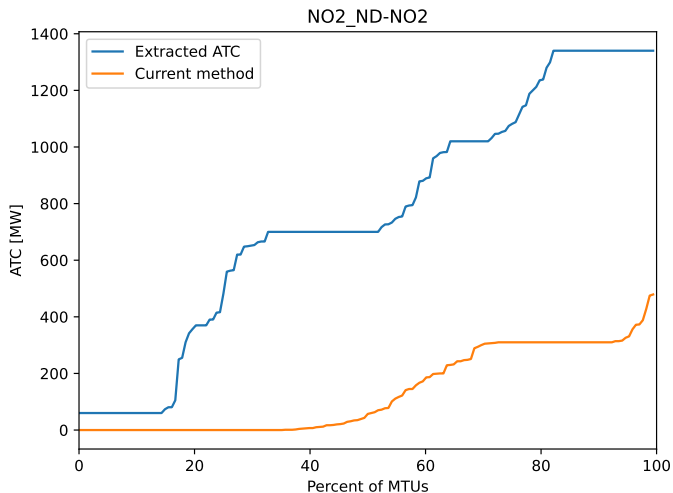
# NO2-NO2\_DE ATC duration curves



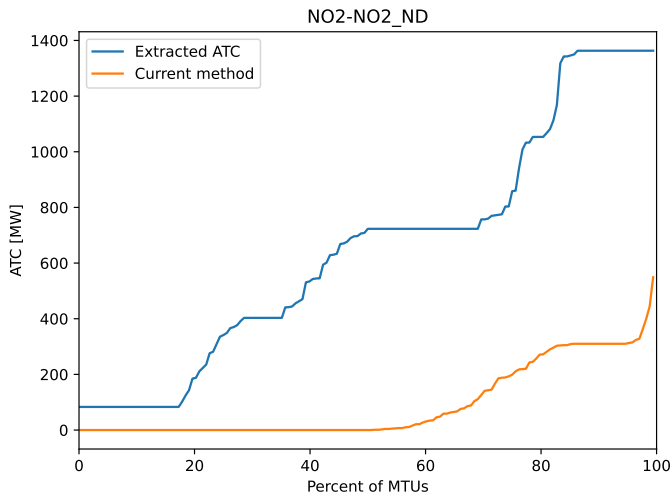
# NO2\_DE-NO2 ATC duration curves



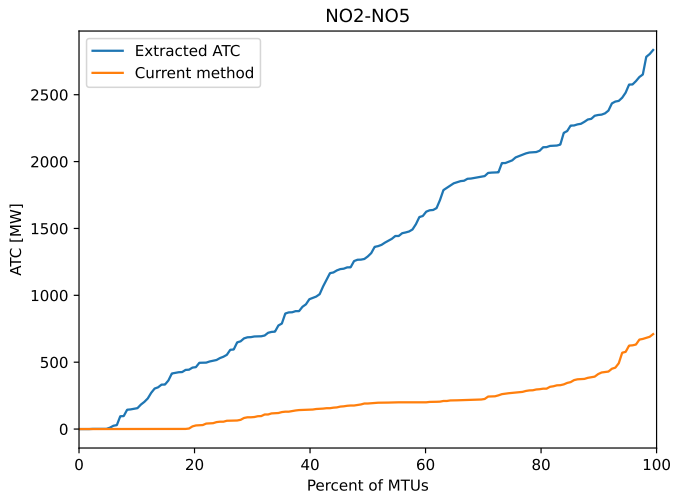
# NO2\_ND-NO2 ATC duration curves



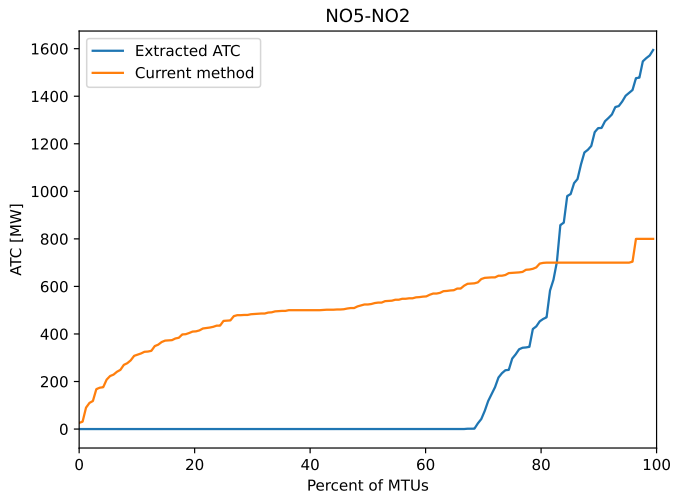
# NO2-NO2\_ND ATC duration curves



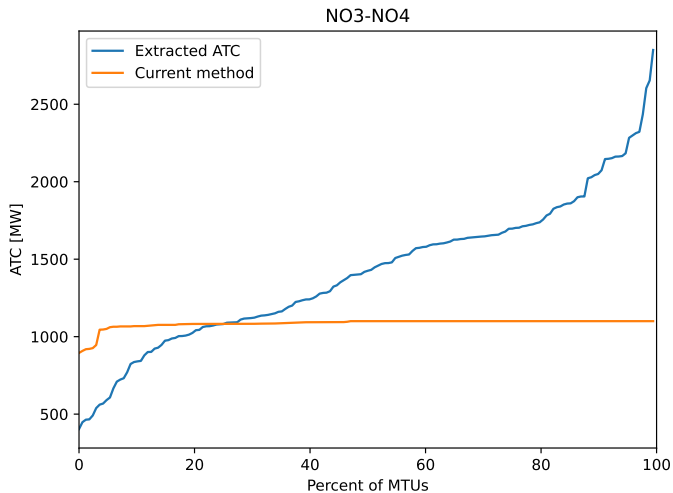
# NO2-NO5 ATC duration curves



# NO5-NO2 ATC duration curves

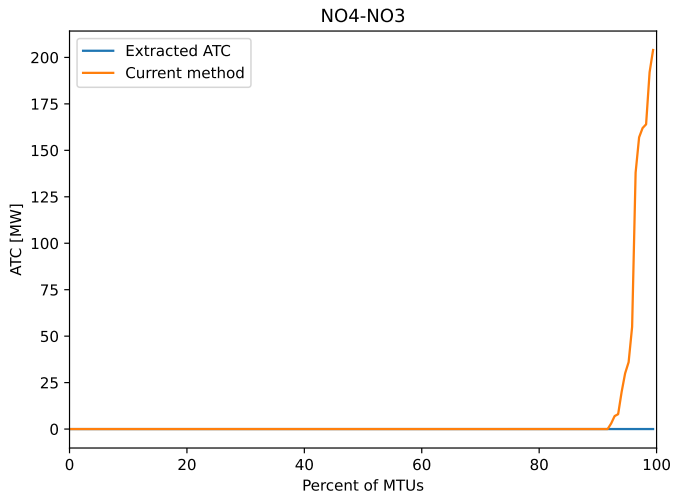


# NO3-NO4 ATC duration curves

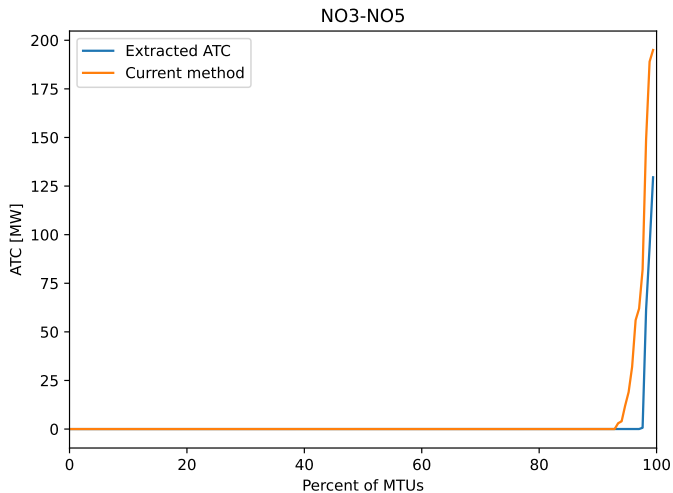




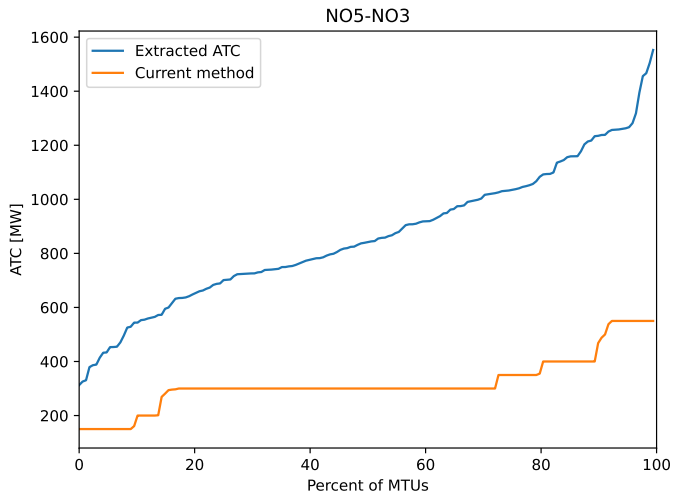
# NO4-NO3 ATC duration curves



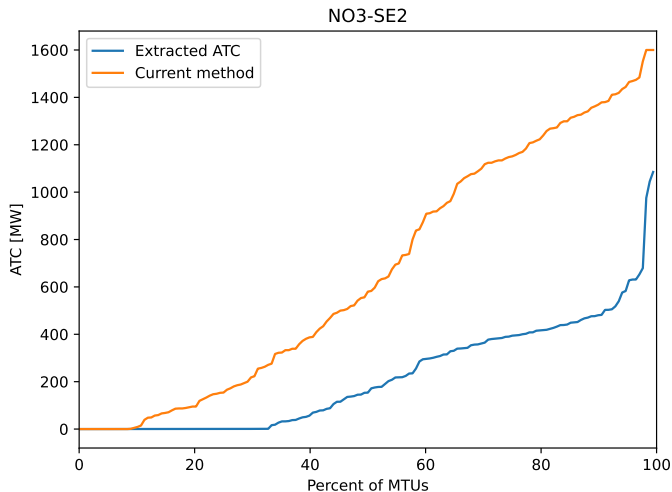
# NO3-NO5 ATC duration curves



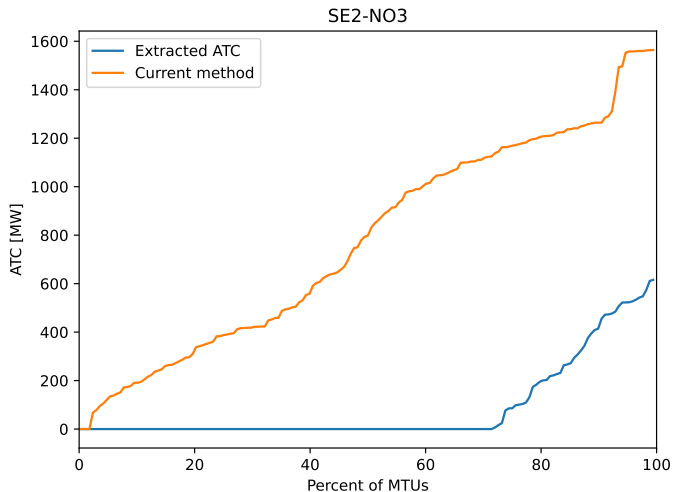
# NO5-NO3 ATC duration curves



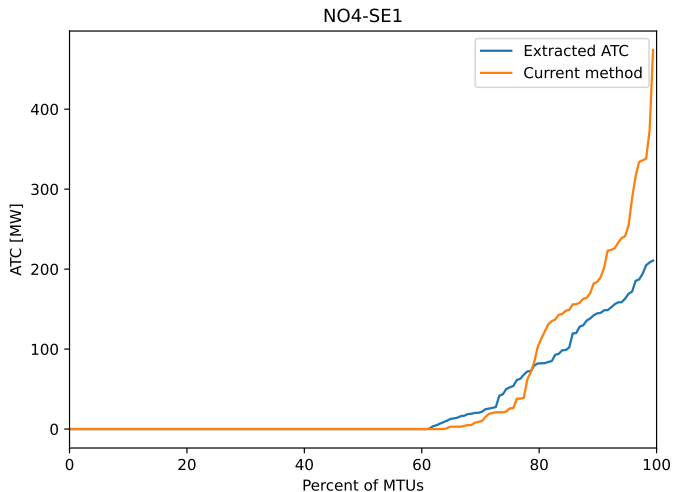
# NO3-SE2 ATC duration curves



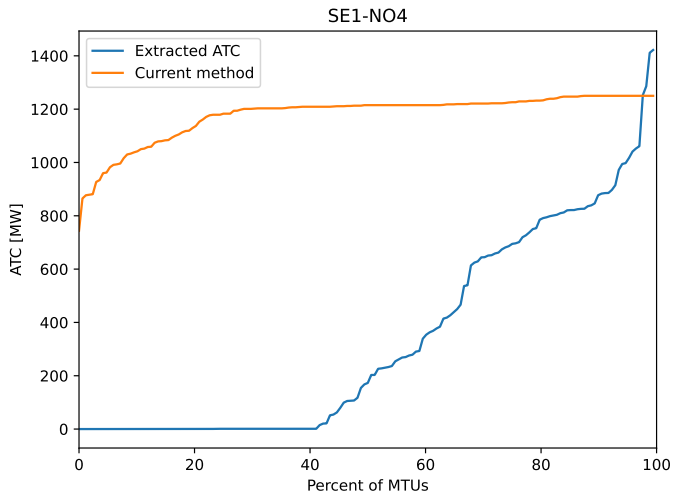
# SE2-NO3 ATC duration curves



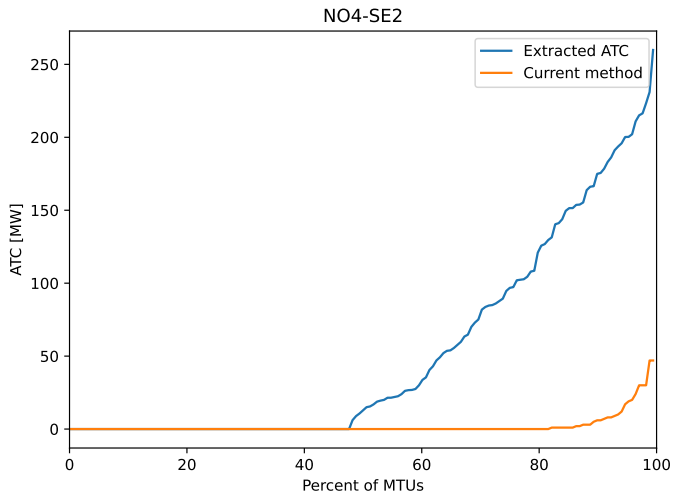
# NO4-SE1 ATC duration curves



# SE1-NO4 ATC duration curves

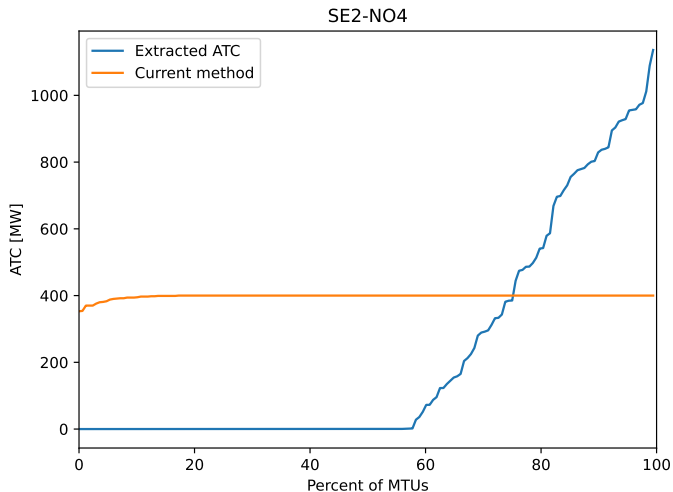


# NO4-SE2 ATC duration curves

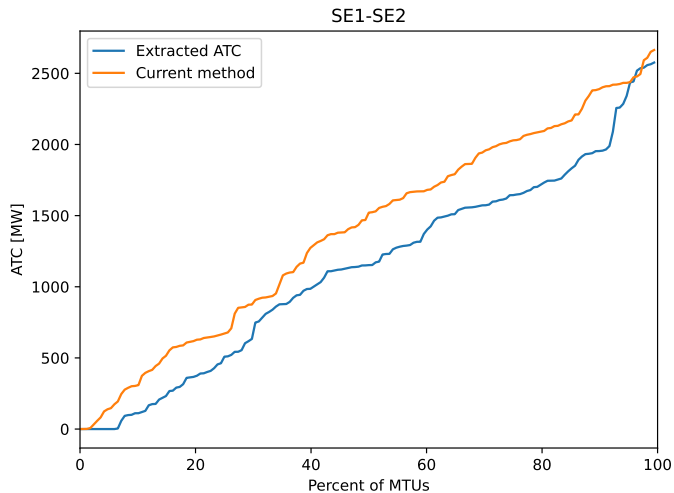




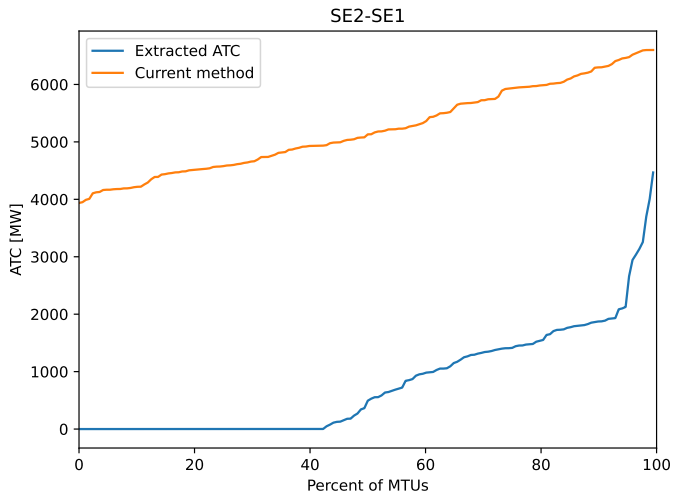
# SE2-NO4 ATC duration curves



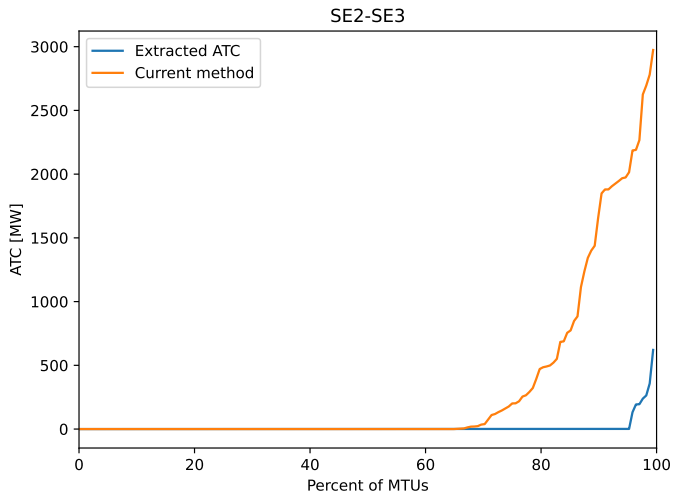
# SE1-SE2 ATC duration curves



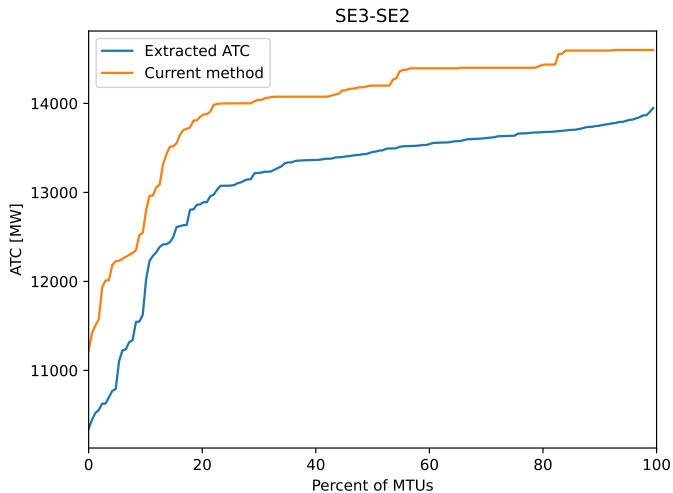
# SE2-SE1 ATC duration curves



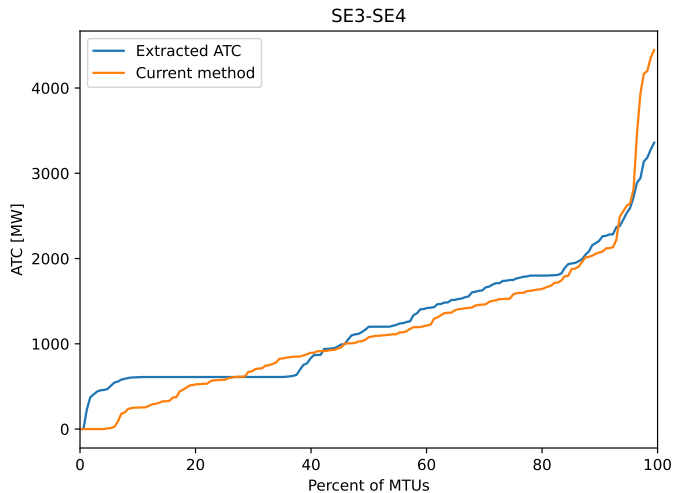
# SE2-SE3 ATC duration curves



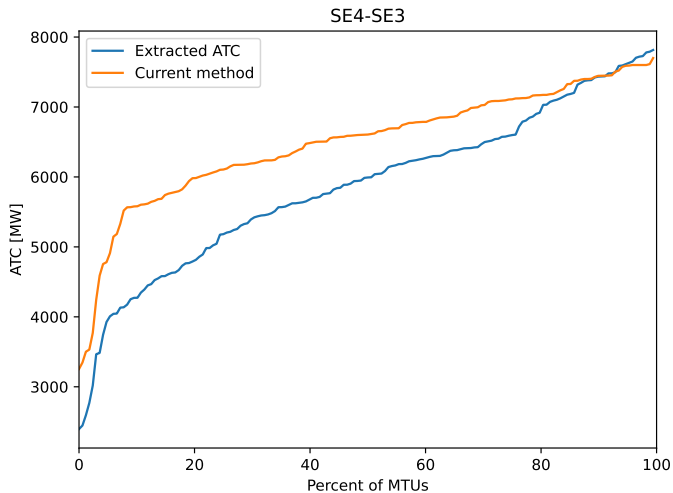
# SE3-SE2 ATC duration curves



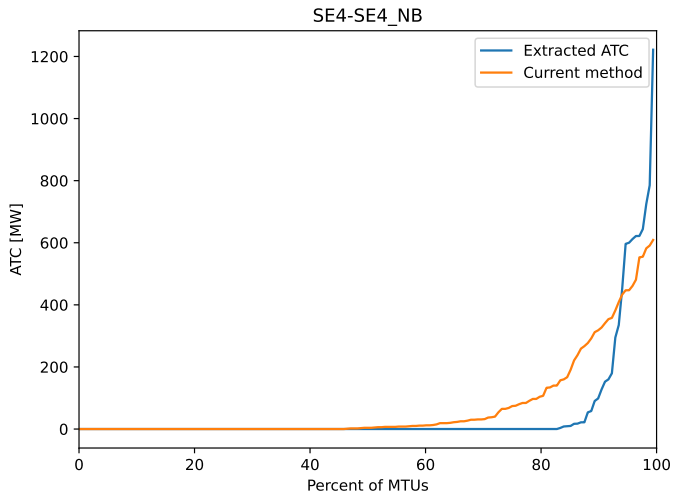
# SE3-SE4 ATC duration curves



# SE4-SE3 ATC duration curves

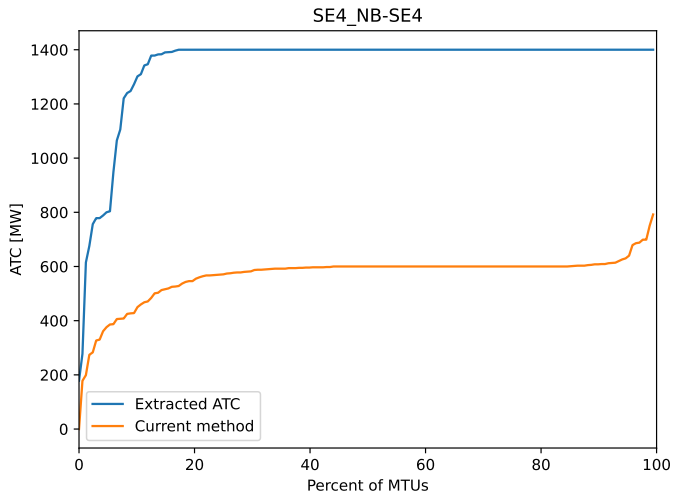


# SE4-SE4\_NB ATC duration curves

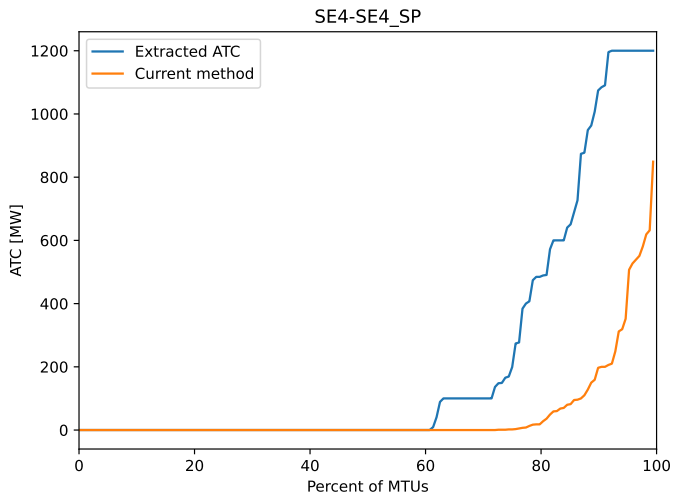




# SE4\_NB-SE4 ATC duration curves



# SE4-SE4\_SP ATC duration curves



# SE4\_SP-SE4 ATC duration curves

