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Moyle Interconnector Settlement

Neil Bingham

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Moyle Interconnector Commercial Arrangements

- Capacity Holder and User Definitions
- Rules and Restrictions
- Ramping Contracts
- Energy Allocations
- Trips and ATC Restrictions
- Metering

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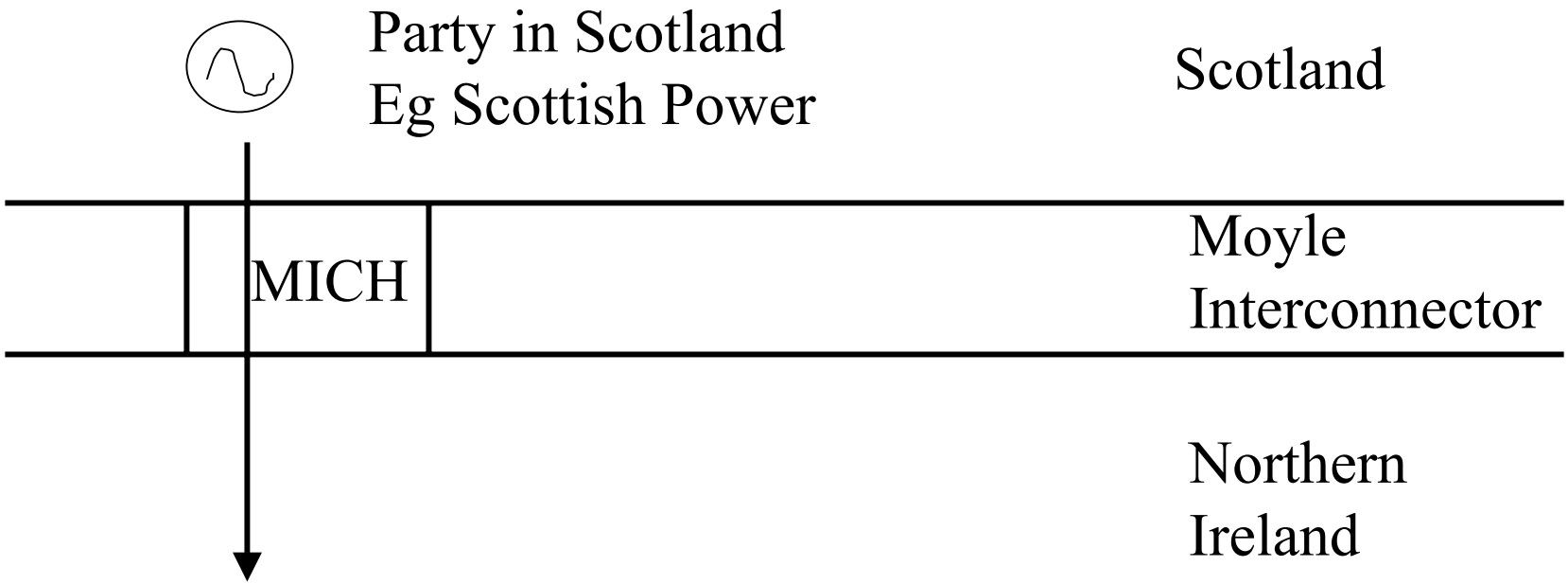
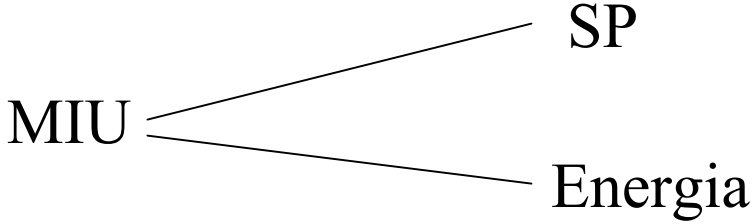
Capacity Holder and User Definitions

- Moyle Interconnector Capacity Holder (MICH)
- Moyle Interconnector User (MIU)
- MIU – Party in Scotland and Party in NI
- MICH – MIU Relationship

Example



Energy Trade



Transport Across Interconnector

MICH - MIU

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Rules and Restrictions

- ATC may not be exceeded
- Energy Nominations <= MICH Capacity
- Instantaneous MW transfer <= Nomination
- Energy Transferred to/from STS in NI
- Interconnector Ramping Restrictions

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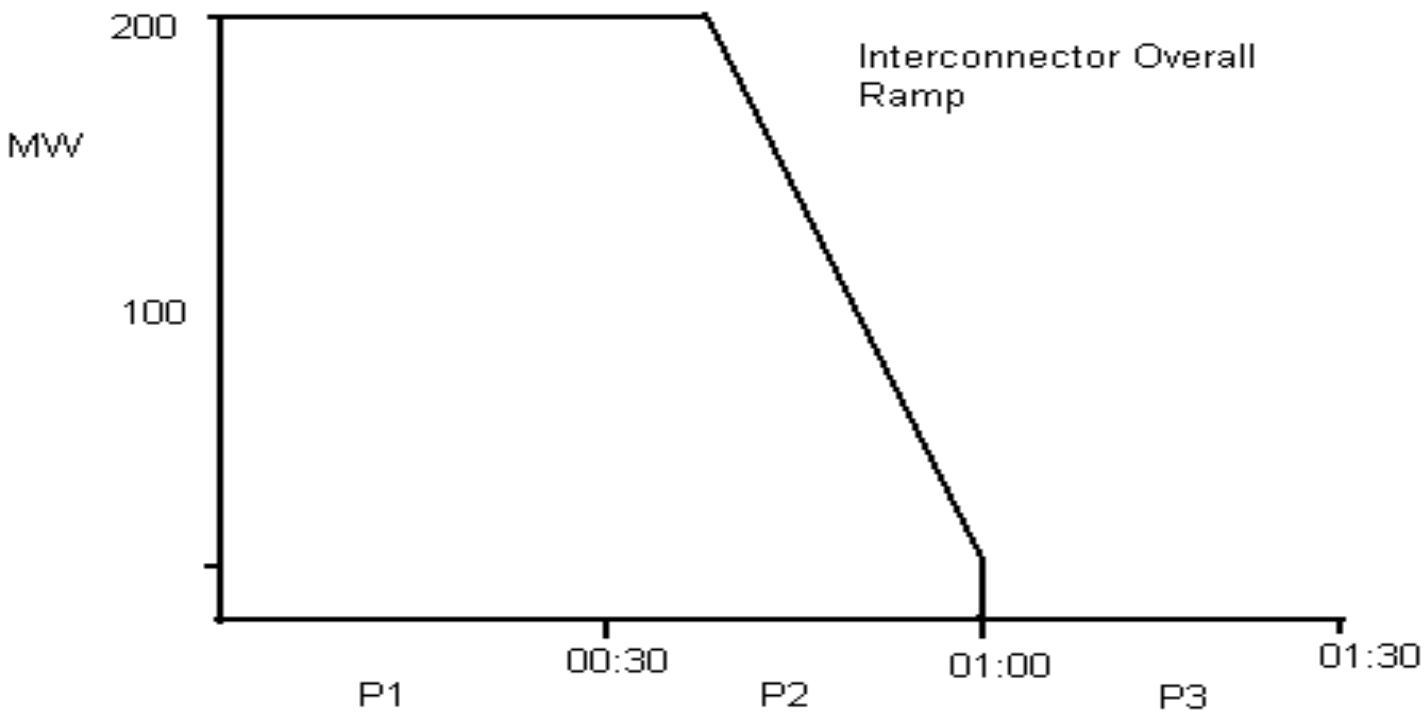

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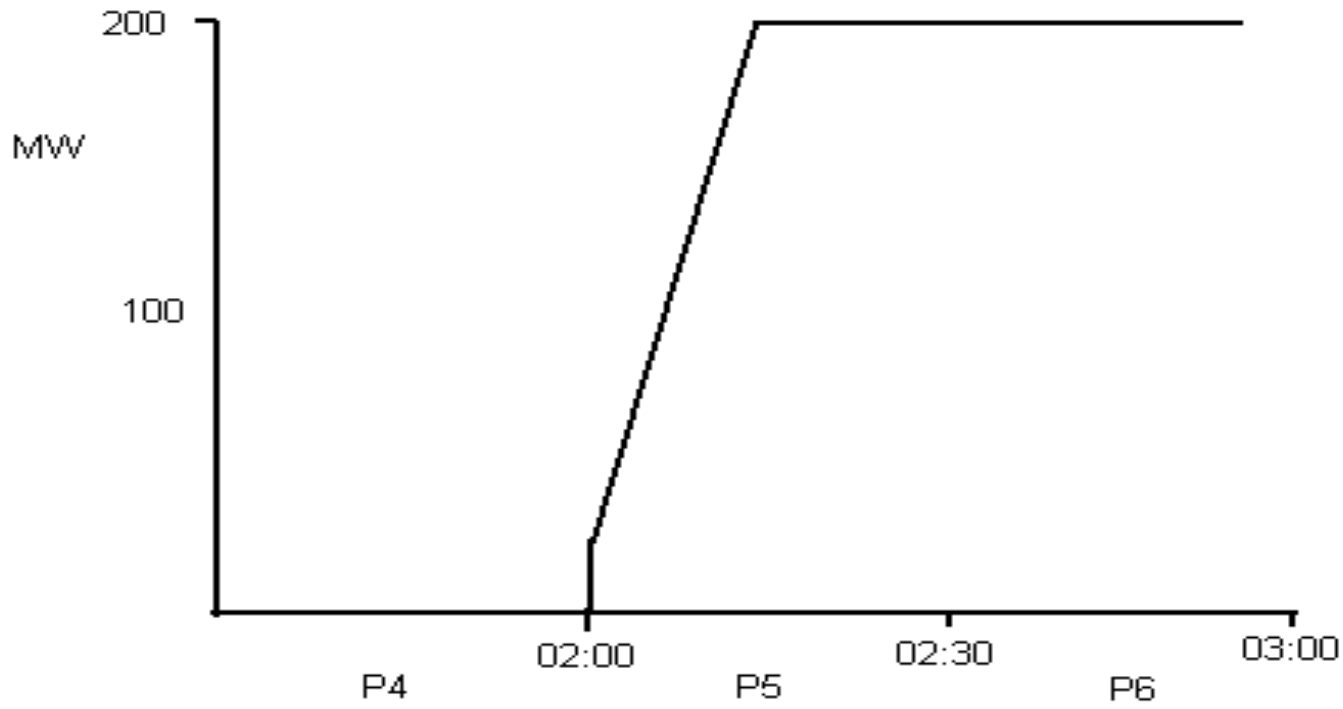

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Individual Contract Ramping and Resultant Energy Allocations

- Energy Allocations from Nominations
- Priority Contract
- Pro-rata Ramping of Contracts
- Simultaneous Ramp Up and Ramp Down of Individual Contracts ie Steps

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Example - Ramping Up

Nominations

	P1	P2	P3
MIU1 {Priority Contract}	0	50	50
MIU2	0	50	50
MIU3	0	100	100

Resultant Energy Allocations

	P1	P2	P3
MIU1 {Priority Contract}	0	47.958	50
MIU2	0	31.667	50
MIU3	0	63.333	100

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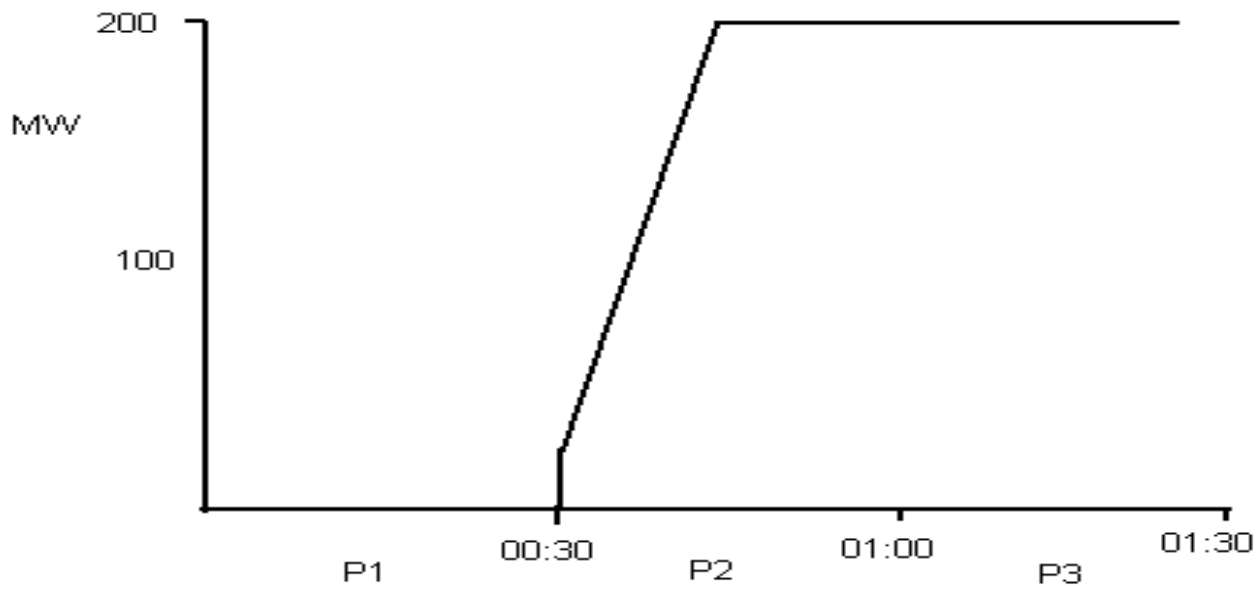
Overall Interconnector Ramping

- Ramping initiated at the start of P2
- Ramp from 0 to 15MW instantaneously
- Ramp from 15MW to 200MW at designated ramp rate (10MW/min)



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Individual Contract Ramping

- Priority contract ramped up first
- Other contracts ramps are initiated after Priority contract reaches its' MW target
- Other contracts ramp together and share the interconnector ramp rate (10MW/min) pro-rata, arriving at their MW targets together.

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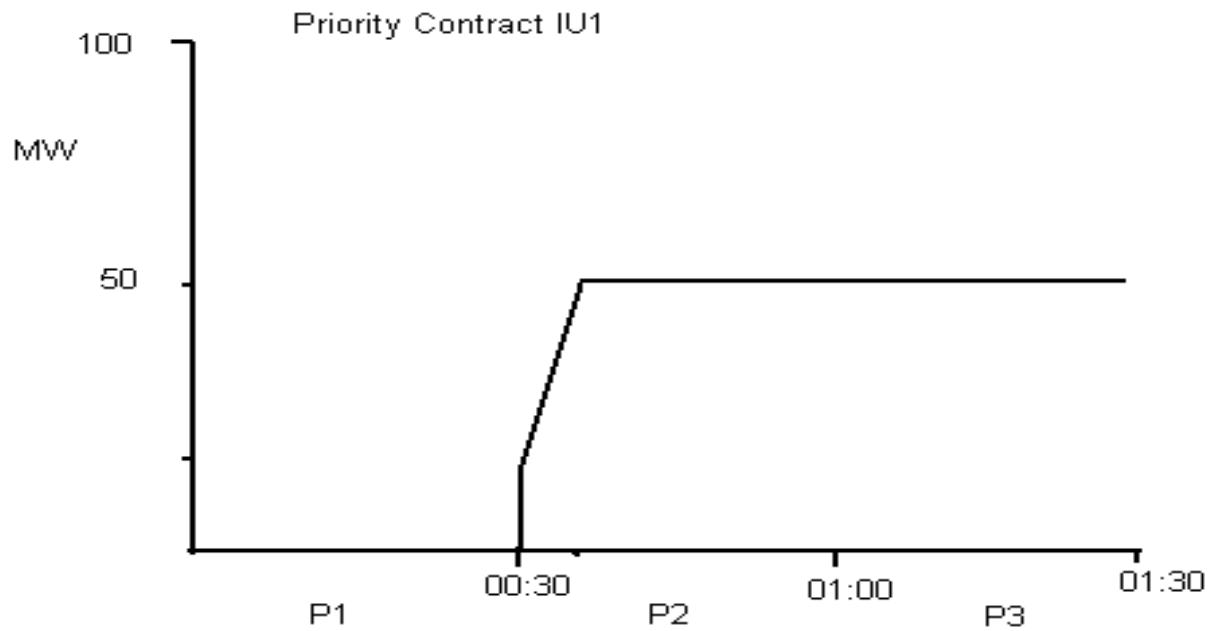
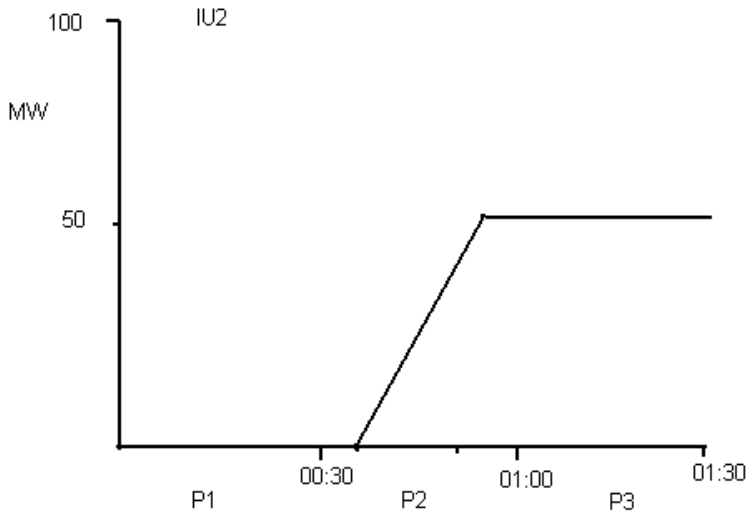
Priority Contract

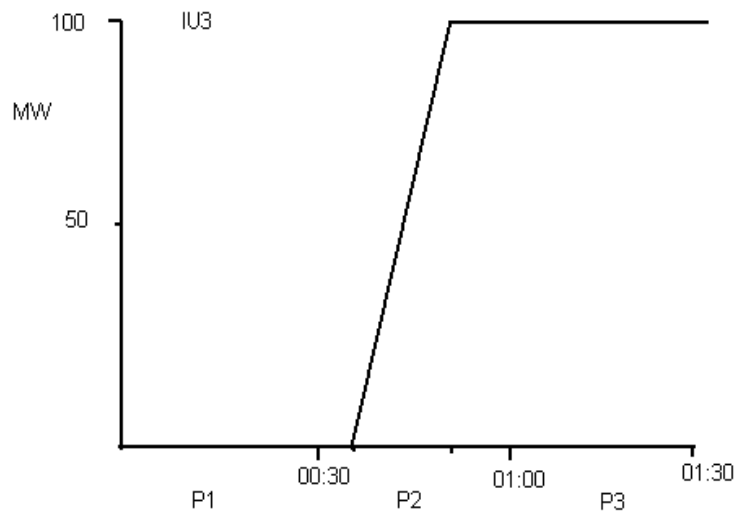
	P1	P2	P3
MIU1 {Nomination}	0	50	50
MIU1 {Energy Allocation}	0	47.958	50



Other Contracts

		P1	P2	P3
MIU2	{Nomination}	0	50	50
MIU2	{Energy Allocation}	0	31.667	50
MIU3	{Nomination}	0	100	100
MIU3	{Energy Allocation}	0	63.333	100





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Dispatch Instructions

Contract	Start Time	From MW	To MW	Ramp Rate	End Time
MIU1	00:30	0	15	Instantaneous	00:30
MIU1	00:30	15	50	10MW/min	00:33.5
MIU2	00:33.5	0	50	3.333MW/min	00:48.5
MIU3	00:33.5	0	100	6.667MW/min	00:48.5

Whole Interconnector

IC	00:30	0	15	Instantaneous	00:30
IC	00:30	15	200	10MW/min	00:48.5

Note : Times will be rounded to the nearest minute for actual dispatch purposes.

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Example - Ramping Down

Nominations

	P1	P2	P3
IU1 {Priority Contract}	50	50	0
IU2	50	50	0
IU3	100	100	0

Resultant Energy Allocations

	P1	P2	P3
IU1 {Priority Contract}	50	47.958	0
IU2	50	31.667	0
IU3	100	63.333	0

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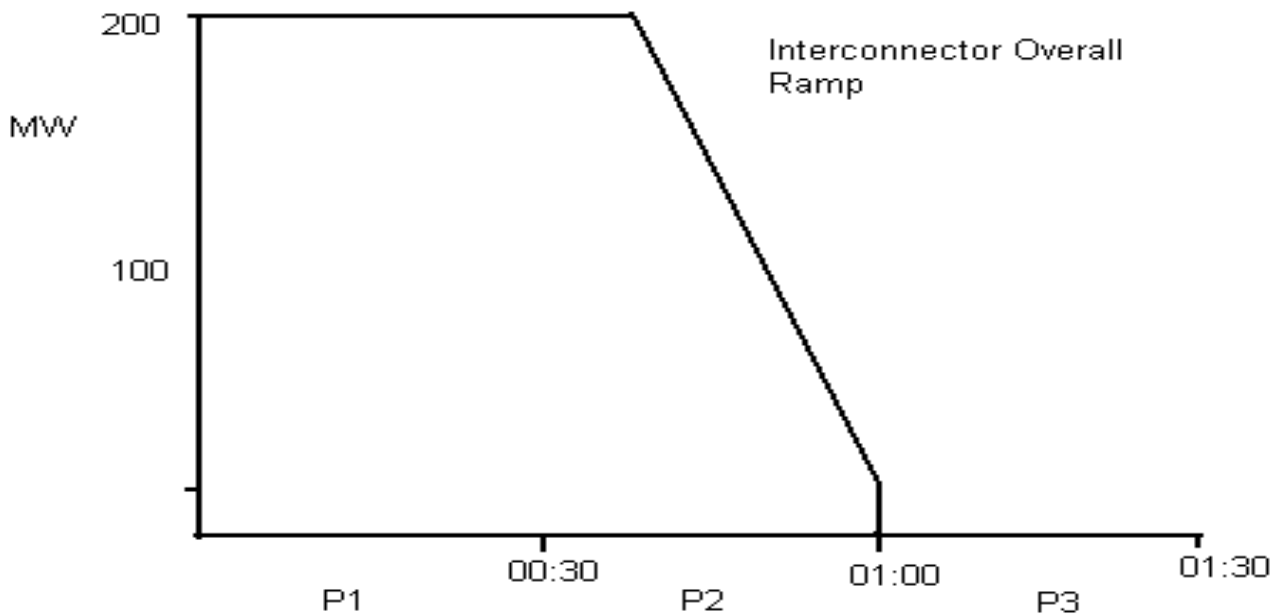
Overall Interconnector Ramping

- Ramping down to be complete by the end of P2
- Ramp from 200MW to 15MW at designated ramp rate (10MW/min)
- Ramp from 15 to 0MW instantaneously



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Individual Contract Ramping

- Priority contract ramped down last
- Other contracts ramp down together and share the interconnector ramp rate (10MW/min) pro-rata, arriving at 0 MW together.

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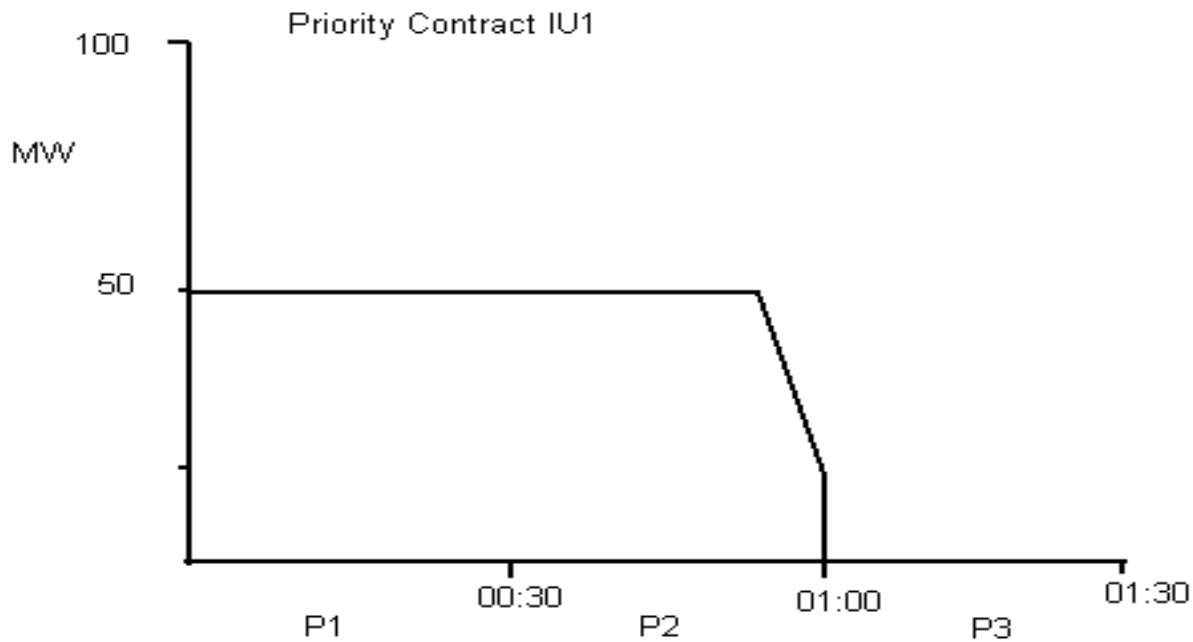
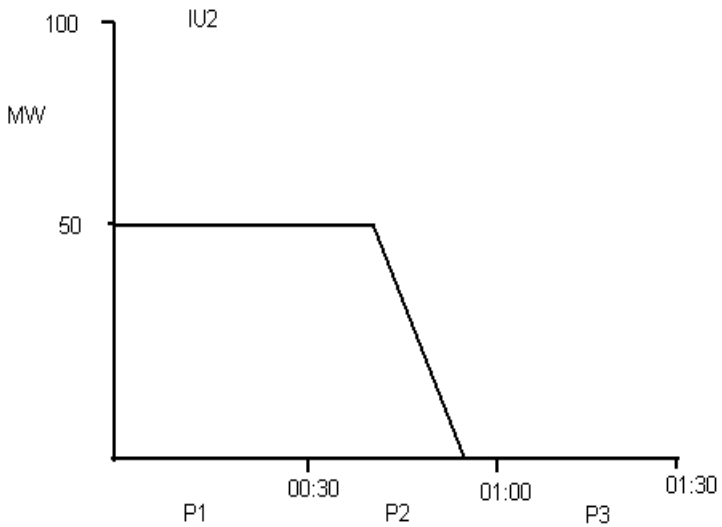
Priority Contract

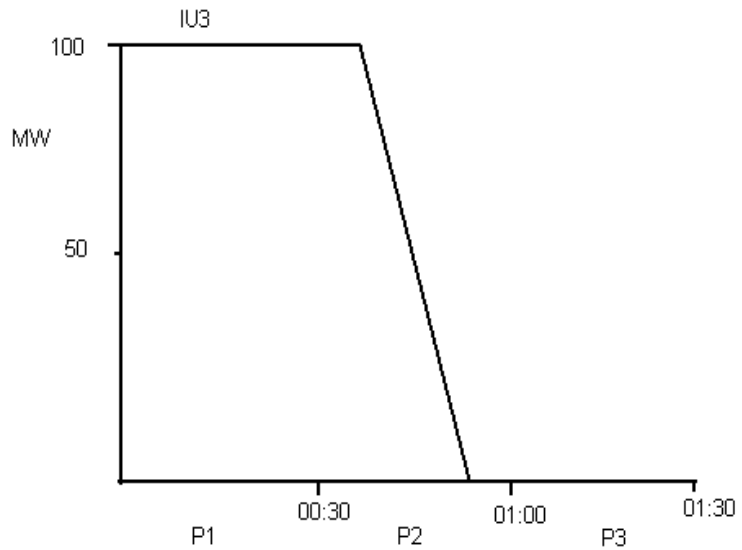
	P1	P2	P3
MIU1 {Nomination}	50	50	0
MIU1 {Energy Allocation}	50	47.958	0



Other Contracts

		P1	P2	P3
MIU2	{Nomination}	50	50	0
MIU2	{Energy Allocation}	50	31.667	0
MIU3	{Nomination}	100	100	0
MIU3	{Energy Allocation}	100	63.333	0





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Dispatch Instructions

Contract	Start Time	From MW	To MW	Ramp Rate	End Time
MIU2	00:41.5	50	0	3.333MW/min	00:56.5
MIU3	00:41.5	100	0	6.667MW/min	00:56.5
MIU1	00:56.5	50	15	10MW/min	01:00
MIU1	01:00	15	0	Instantaneous	01:00
Whole Interconnector					
IC	00:41.5	200	15	10MW/min	01:00
IC	01:00	0	15	Instantaneous	01:00

Note : Times will be rounded to the nearest minute for actual dispatch purposes.

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Simultaneous Ramp Up and Ramp Down of Individual Contracts ie Steps

- No net nomination change on the interconnector
- Net positive nomination change on the interconnector
- Net negative nomination change on the interconnector

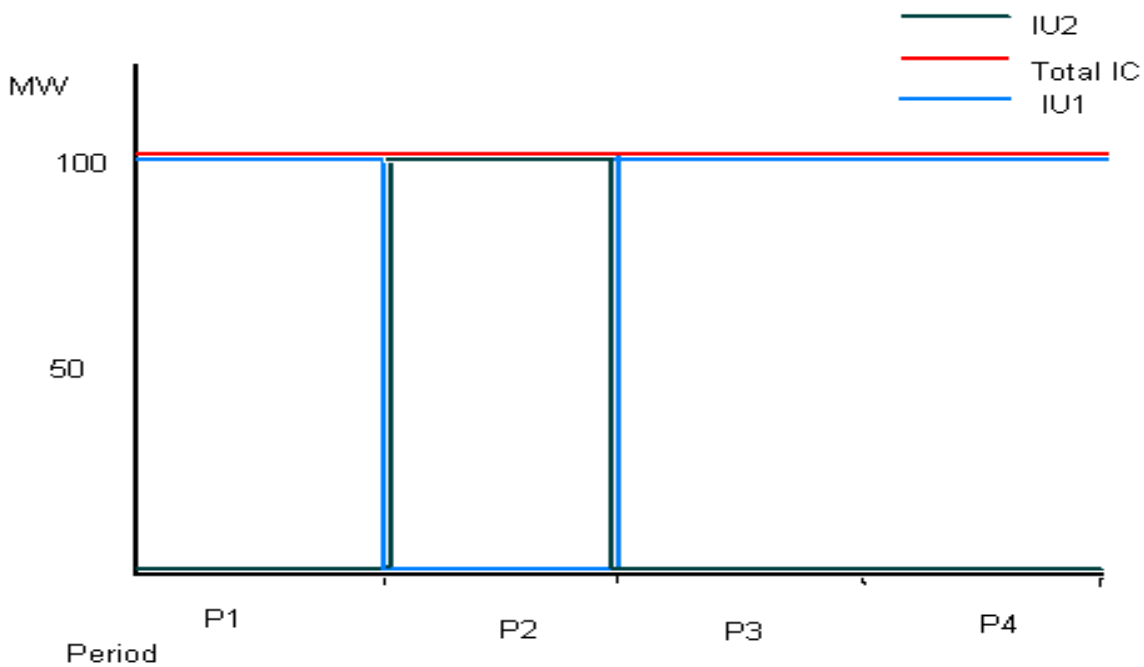
No Net Nomination Change on the Interconnector

Nominations

	P1	P2	P3	P4
MIU1	100	0	100	100
MIU2	0	100	0	0

Energy Allocations

	P1	P2	P3	P4
MIU1	100	0	100	100
MIU2	0	100	0	0



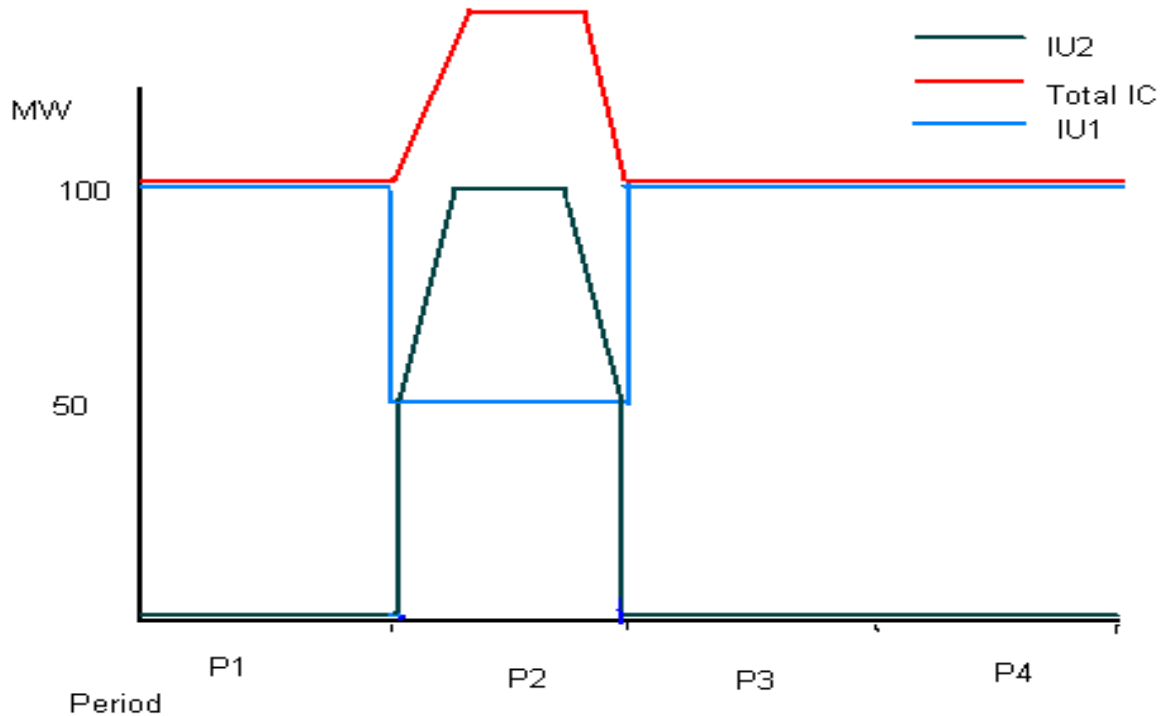
Net Positive Nomination Change on the Interconnector

Nominations

	P1	P2	P3	P4
MIU1	100	50	100	100
MIU2	0	100	0	0

Energy Allocations

	P1	P2	P3	P4
MIU1	100	50	100	100
MIU2	0	91.7	0	0



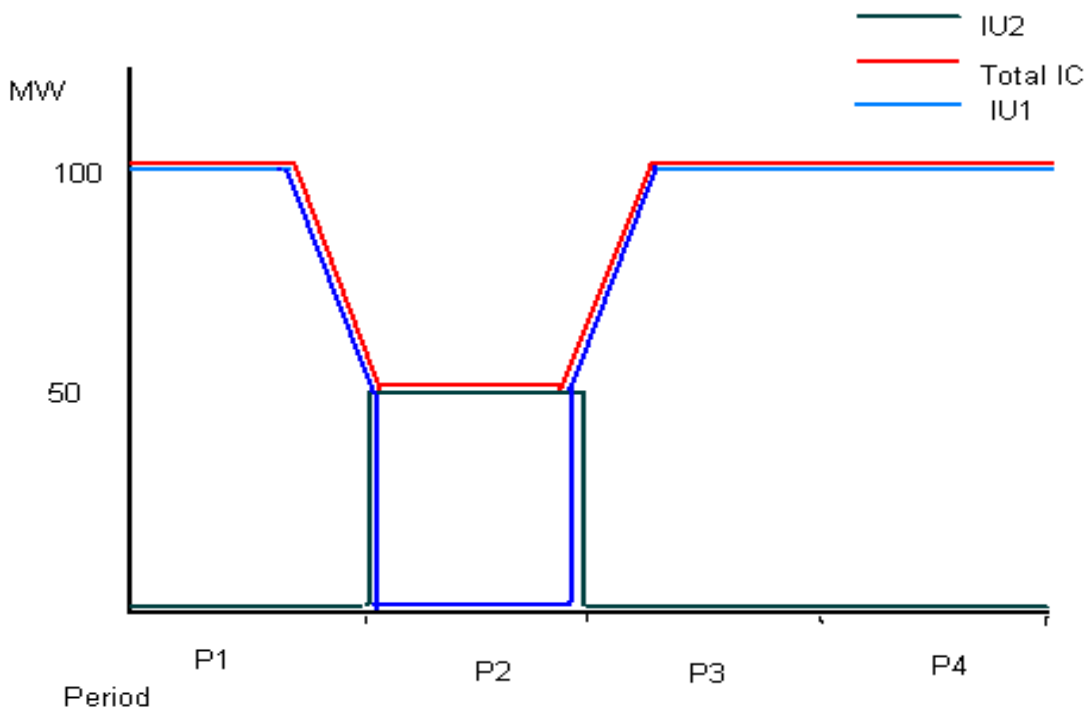
Net Negative Nomination Change on the Interconnector

Nominations

	P1	P2	P3	P4
MIU1	100	0	100	100
MIU2	0	50	0	0

Energy Allocations

	P1	P2	P3	P4
MIU1	95.8	0	95.8	100
MIU2	0	50	0	0



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Trips and ATC Restrictions

- Priority contract gets any available energy first
- Other contracts share the remaining energy on a pro-rata basis

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Metering

- All Energy Allocations are “Deemed to have flowed”
- Difference between total Energy Allocations and Interconnector Metering settled between TSOs (Error Account)
- Error Account is small – consequence of Commercial Model

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