Guide to Rebalancing

Scheduling and Dispatch Programme

November 2025

EirGrid

SONI

Contents

1 Background and Purpose

To support renewable energy targets set by the Irish and Northern Irish governments, EirGrid, SONI, and SEMO are implementing a series of initiatives to ensure the secure and efficient operation of the electricity system with up to 80% renewable electricity and 95%+ System Non-Synchronous Penetration on an instantaneous basis. Many of these initiatives focus on improving how the system is scheduled and dispatched and, together with changes required under the EU Clean Energy Package, form the Scheduling & Dispatch Programme (SDP).

SDP Initiative 4 (SDP_04) – Wind Dispatchability Improvements aims to strengthen the Control Centres' capability to manage renewable generation (wind and solar) and introduce a fairer approach to constraint and curtailment allocation. A key feature of this initiative is "rebalancing", which enables the redistribution of constraint and curtailment allocations among renewable generation units in response to changing weather conditions and unit availabilities. As part of SDP_04, this functionality will be delivered through upgrades to the Wind Dispatch Tool, including new dispatch functionality and improved decision-support views.

This Guide to Rebalancing is intended to provide a clear explanation of the issues addressed by SDP_04, introduce the concept of "rebalancing", and explain the principles behind its application.

This document relates solely to SDP_04 and is independent of the changes that will be delivered as part of SDP Initiative 1 (SDP_01) - Non-Priority Dispatch Renewables.

2 Issue Description

As renewable energy generation continues to grow across Ireland, a key operational challenge has emerged in how constraint and curtailment are allocated to wind and solar farms. Currently, constraint and curtailment setpoints are apportioned across renewable generation units within the same priority dispatch band based on their availability at the time of allocation and their ability to contribute to the group's overall target. These setpoints can remain active for several hours before being released.

Wind and solar farms are geographically dispersed, and their availabilities can change significantly even within the same constraint group due to changing weather conditions. Over time, this variability means that the original allocation, based on initial availability, can become increasingly unbalanced. Reallocation is currently not feasible without fully removing and reapplying the constraints and/or curtailment, which is operationally impractical. As a result, by the time the instruction is fully released, the original allocation may no longer reflect an equitable distribution.

This current approach to allocation can have commercial implications. Some wind farms, due to their location within constraint groups and prevailing wind patterns, have reported being disproportionately impacted, which has led participants to raise this issue repeatedly with the Regulatory Authorities and the TSOs. A similar challenge exists for solar units. In some cases, a solar farm may be constrained or curtailed at night or early in the morning when its availability is naturally low. If this instruction remains active well into the day due to current system limitations, the unit may miss its optimal generation window entirely, resulting in lost opportunity and revenue.

Figure 1 and *Figure 2* illustrate this challenge using a simplified example of three wind farms (WF A, WF B, WF C) and one solar farm (SF A) within the same constraint group but geographically dispersed. In *Figure 1*, at T = 0 hours, constraint setpoints are applied based on each unit's availability. By T = 10 hours, weather conditions change - some units have more available power, others less – yet the original setpoints remain unchanged. *Figure 2* shows a similar issue: at 06:00, constraint setpoints are applied when SF A has zero availability. At 12:00 and 18:00, SF A has high availability but remains constrained at 0 MW. This mismatch highlights the need for a mechanism to redistribute setpoints as availability changes.

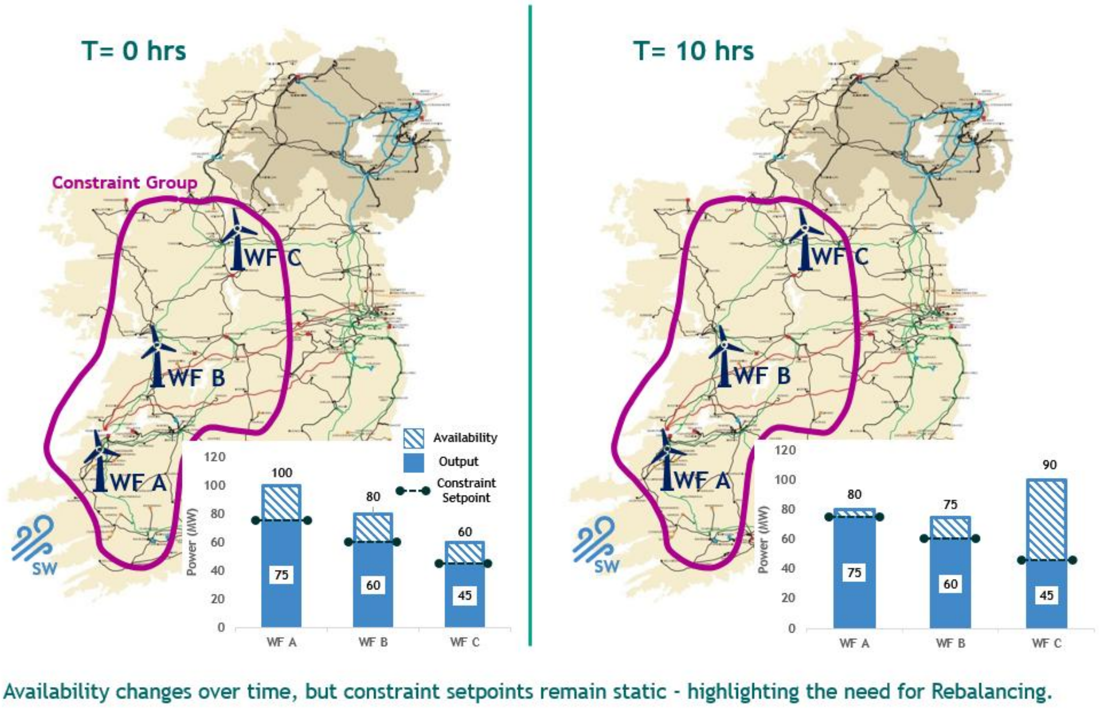

Figure 1 Wind Farm Availability vs Constraint Setpoint over time.

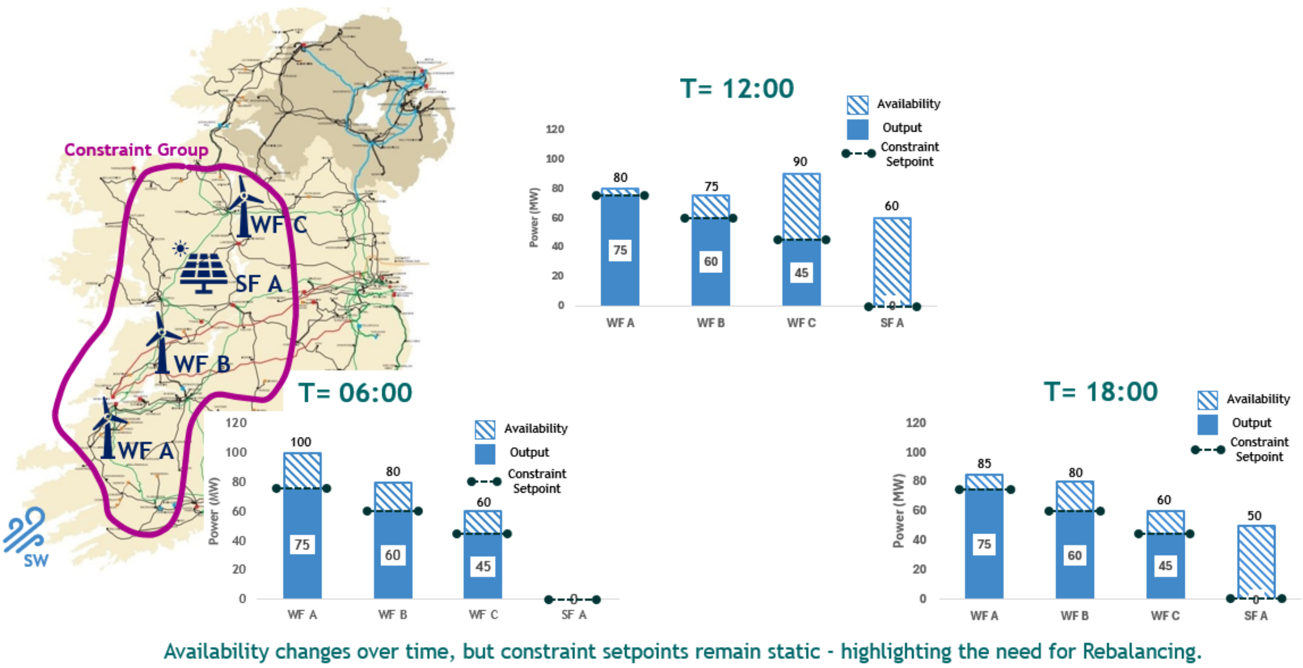

Figure 2 Solar Farm Availability vs Constraint Setpoint over time.

Industry stakeholders have called for a more dynamic and equitable approach to constraint and curtailment allocation. The concept of “rebalancing”, introduced in SDP_04, addresses this challenge by enabling Control Centres to adjust setpoints based on updated availability, ensuring a more equitable allocation of constraint and curtailment.

3 Definition of Rebalancing

To address industry concerns and resolve the issue described in Section 2, the TSOs have introduced a new concept: Rebalancing.

Rebalancing is the adjustment of constraint or curtailment setpoints within a group of renewable generation units to reflect each unit's current availability and ability to contribute to the group's overall constraint or curtailment target.

Rebalancing is initiated at the discretion of the Control Centre to maintain system security.

Within a group of renewable generation units, constraint and curtailment setpoints are applied on a pro-rata basis according to each unit's output, which is generally equal to its availability at first application. However, as time progresses and weather conditions change, the availability of units may vary, but these changes are not reflected in their initial allocations. Rebalancing redistributes unit constraint and curtailment setpoints across the group, taking into account updated availability, while the original group constraint and curtailment targets remain unchanged[1]. It allows for the adjustment of setpoints to reflect each unit's current ability to contribute to the group's target. This may result in higher setpoints for some units and lower setpoints for others, without altering the overall group-level constraint or curtailment target.

For rebalancing of curtailment or constraint within a group, setpoints are calculated on a pro-rata basis with reference to each unit's maximum allowable output for rebalancing, as outlined below:

- For Curtailment:
  - The maximum allowable output[2] for rebalancing is the minimum of (Available Active Power[3], Constraint Setpoint), to the extent that each of these is active.
  - Only units where the current curtailment setpoint is below any active constraint setpoint may be included in rebalancing of curtailment.
- For Constraint:
  - The maximum allowable output[2] for rebalancing is the minimum of (Available Active Power[3], Curtailment Setpoint), to the extent that each of these is active.
  - Only units where the current constraint setpoint is below any active curtailment setpoint may be included in rebalancing of constraint.

Unit setpoints for rebalancing curtailment or constraint within a group are calculated by the Wind Dispatch Tool as follows:

$$Unit\ Setpoint = Group\ MW\ Target\ \times \left(\frac{Unit\ Reference\ Quantity}{Sum\ of\ Reference\ Quanities}\right)$$

[1] Group target is adjusted if unit availability drops below previous setpoint (see Worked Examples Scenario 4).
[2] Maximum Allowable Output = Reference Quantity (in Rebalancing formula)
[3] Available Active Power = Availability

On occasion, units are excluded from certain rebalancing actions due to the complexity introduced by the layered application of constraint and curtailment actions. It is not practical to rebalance previous curtailment actions that have been superseded by subsequent constraint actions, and vice versa. Furthermore, attempting to rebalance these 'locked-in' setpoints could compromise system security, e.g. creating a non–net-zero rebalancing volume or by inadvertently lifting a constraint.

To maintain operational integrity, Rebalancing is therefore limited to the most recent active layer of constraint or curtailment action on each unit. This is further illustrated in Section 5: Worked Examples.

4 Control Centre Decision Support

To support operational decision making with regards to rebalancing, Control Centres will be provided with automated indicators - called Rebalance Indices - that help assess whether rebalancing may be necessary within a group of renewable generation units.

These indices help the Control Centres assess the need for rebalancing and, based on prevailing system conditions, decide whether rebalancing can be initiated. If the indices suggest a significant scope for rebalancing, they may trigger an alert, prompting the Control Centre to consider initiating a rebalancing action.

Indices may be calculated and alerts generated as often as every minute, based on real time telemetry from participants. Rebalancing actions will always be initiated at the discretion of the Control Centres, while managing competing system security priorities.

5 Worked Examples

This section presents simplified examples to help market participants understand the concept and principles of rebalancing.

The examples follow four wind farms - WF A, WF B, WF C and WF D – across different time periods and scenarios. WF A and WF B are geographically dispersed but belong to the same constraint group. The section includes four scenarios, each designed to illustrate different aspects of rebalancing in practice.

5.1 Scenario 1: Rebalancing Under Single Active Setpoint

This scenario shows how the Control Centre will perform rebalancing when only one active setpoint is in effect. It traces the progression from unconstrained operation to the application of a constraint and the subsequent rebalancing as availabilities change, emphasizing the use of pro-rata allocation during both the initial constraint application and the rebalancing process.

At **t = 0**, all four wind farms operate at their full availability, as shown in *Figure 3*.

t = 0

	WF A	WF B	WF C	WF D
Availability (MW)	100	60	80	90
Constraint Setpoint (MW)	N/A	N/A	N/A	N/A
Curtailment Setpoint (MW)	N/A	N/A	N/A	N/A
Reference Quantity (MW)	N/A	N/A	N/A	N/A
New Setpoint (MW)	N/A	N/A	N/A	N/A
Active Power Output (MW)	100	60	80	90
Total Output (MW)	330			

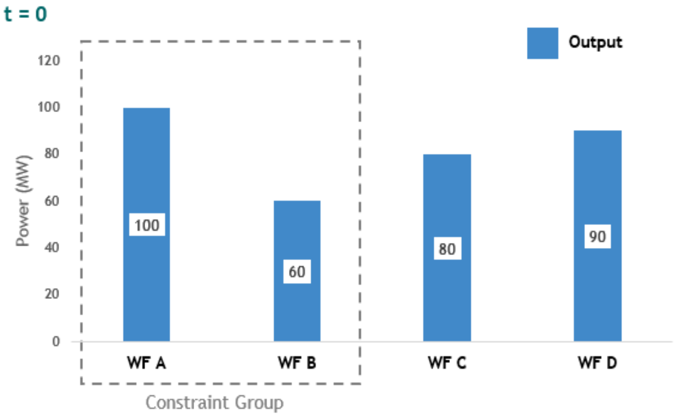

Figure 3 Running to Availability at t = 0

At **t = 1**, the Control Centre applies a constraint to maintain system security, reducing the constraint group's output from 160 MW to the 100 MW target. The 60 MW reduction is allocated on a pro-rata basis across WF A and WF B, as shown in *Figure 4.*

t = 1

Apply Constraint, Target (MW) = 100				
	WF A	WF B	WF C	WF D
Availability (MW)	**100**	**60**	80	90
Constraint Setpoint (MW)	N/A	N/A	N/A	N/A
Curtailment Setpoint (MW)	N/A	N/A	N/A	N/A
Reference Quantity (MW)	100	60	N/A	N/A
New Constraint Setpoint (MW)	62.5	37.5	N/A	N/A
Active Power Output (MW)	62.5	37.5	80	90
Total Output (MW)	270			

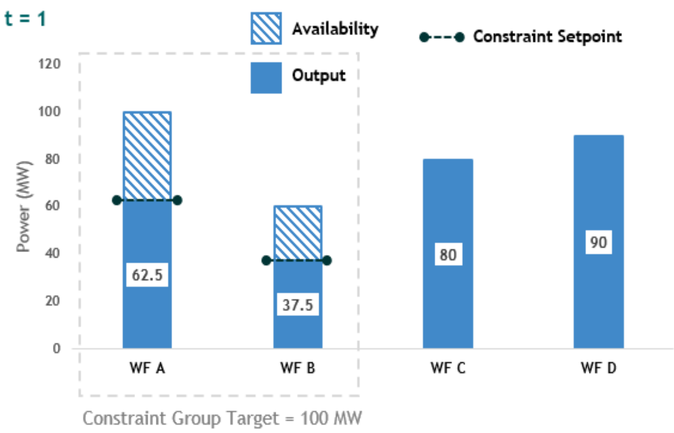

Figure 4 Application of Constraint at t = 1

At **t = 2**, changing weather conditions alter wind farm availability, as shown in *Figure 5*.

t = 2

Availability Changes				
	WF A	**WF B**	**WF C**	**WF D**
Availability (MW)	**70**	**100**	**70**	**50**
Constraint Setpoint (MW)	62.5	37.5	N/A	N/A
Curtailment Setpoint (MW)	N/A	N/A	N/A	N/A
Reference Quantity (MW)	N/A	N/A	N/A	N/A
New Setpoint (MW)	N/A	N/A	N/A	N/A
Active Power Output (MW)	62.5	37.5	70	50
Total Output (MW)	**220**			

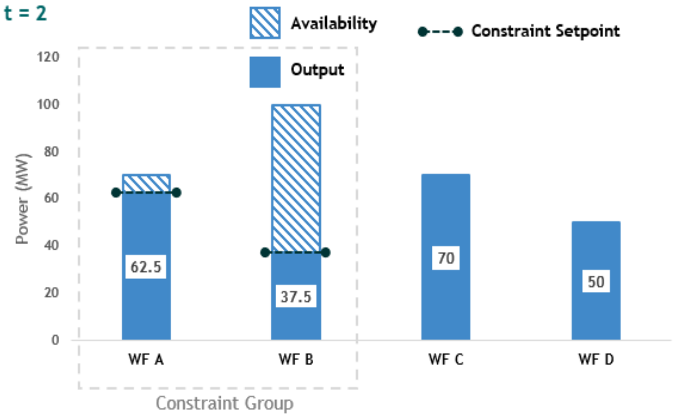

Figure 5 Availability Changes at t = 2

At **t = 3**, the Control Centre decides to initiate rebalancing on the constraint group. Unit constraint setpoints for rebalancing are calculated on a pro-rata basis, where the maximum allowable output for each unit is the minimum of its Available Active Power or active Curtailment Setpoint. The constraint target remains 100 MW and is re-allocated as shown in *Figure 6*.

t = 3

Rebalance Constraint				
	WF A	**WF B**	**WF C**	**WF D**
Availability (MW)	**70**	**100**	70	50
Constraint Setpoint (MW)	62.5	37.5	N/A	N/A
Curtailment Setpoint (MW)	N/A	N/A	N/A	N/A
Reference Quantity (MW)	70	100	N/A	N/A
New Constraint Setpoint (MW)	41.2	58.8	N/A	N/A
Active Power Output (MW)	41.2	58.8	70	50
Total Output (MW)	**220**			

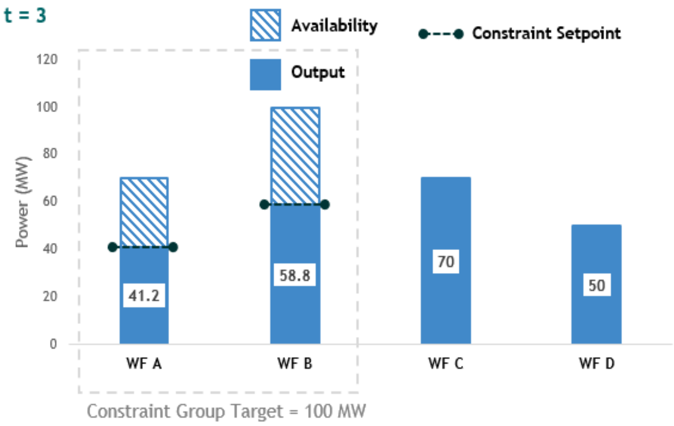

Figure 6 Rebalancing of Constraint at t = 3

5.2 Scenario 2: Rebalancing Under Multiple Active Setpoints

This scenario shows how the Control Centre will perform rebalancing when multiple setpoints are active. It follows the sequence from unconstrained operation through the application of a constraint and curtailment, then rebalancing as conditions evolve, highlighting how pro-rata allocation is applied across multiple setpoints and units.

At **t = 0**, all four wind farms operate at their full availability, as shown in *Figure 7*.

t = 0

	WF A	WF B	WF C	WF D
Availability (MW)	100	60	90	60
Constraint Setpoint (MW)	N/A	N/A	N/A	N/A
Curtailment Setpoint (MW)	N/A	N/A	N/A	N/A
Reference Quantity (MW)	N/A	N/A	N/A	N/A
New Setpoint (MW)	N/A	N/A	N/A	N/A
Active Power Output (MW)	100	60	90	60
Total Output (MW)	310			

t = 0

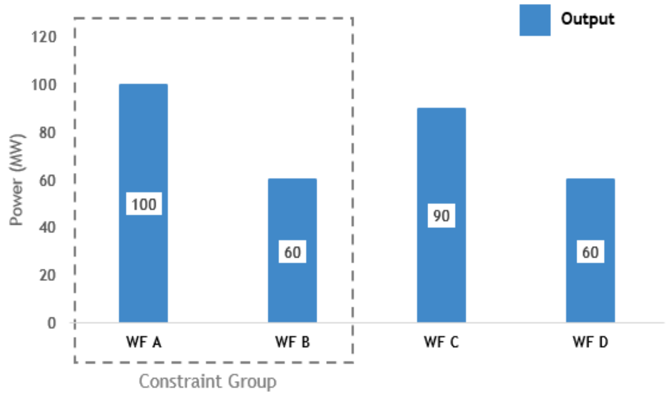

Figure 7 Running to Availability at t = 0

At **t = 1**, the Control Centre applies a constraint to maintain system security, reducing the constraint group's output from 160 MW to the 100 MW target. The 60 MW reduction is allocated on a pro-rata basis across WF A and WF B, as shown in *Figure 8*.

t = 1

Apply Constraint, Target (MW) = 100				
	WF A	WF B	WF C	WF D
Availability (MW)	**100**	**60**	90	60
Constraint Setpoint (MW)	N/A	N/A	N/A	N/A
Curtailment Setpoint (MW)	N/A	N/A	N/A	N/A
Reference Quantity (MW)	**100**	**60**	N/A	N/A
New Constraint Setpoint (MW)	62.5	37.5	N/A	N/A
Active Power Output (MW)	62.5	37.5	90	60
Total Output (MW)	250			

t = 1

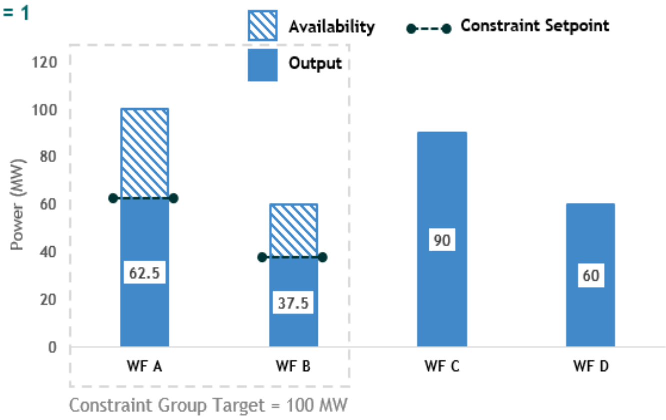

Figure 8 Application of Constraint at t = 1

At **t = 2**, the Control Centre applies curtailment to keep the system within its SNSP limit, reducing total wind output from 250 MW to 200 MW. The 50 MW reduction is allocated on a pro-rata basis, relative to current output, across WF A, WF B, WF C and WF D, as shown in *Figure 9*.

t = 2

Apply Curtailment, Target (MW) = 200				
	WF A	WF B	WF C	WF D
Availability (MW)	100	60	90	60
Constraint Setpoint (MW)	62.5	37.5	N/A	N/A
Curtailment Setpoint (MW)	N/A	N/A	N/A	N/A
Reference Quantity (MW)	62.5	37.5	90	60
New Curtailment Setpoint (MW)	50	30	72	48
Active Power Output (MW)	50	30	72	48
Total Output (MW)	200			

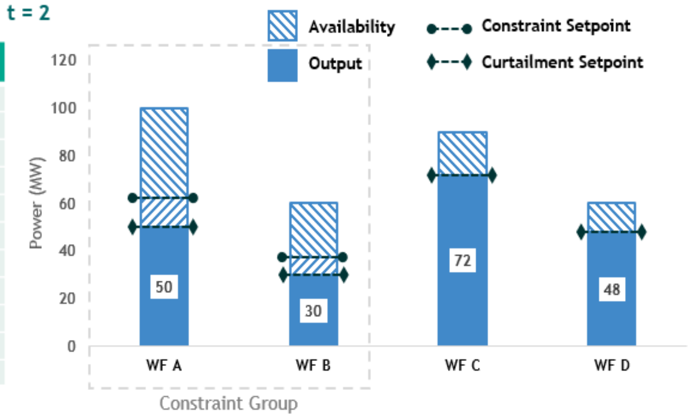

Figure 9 Application of Curtailment at t = 2

At **t = 3**, changing weather conditions alter wind farm availability, as shown in *Figure 10*.

t = 3

Availability Changes				
	WF A	WF B	WF C	WF D
Availability (MW)	70	90	75	100
Constraint Setpoint (MW)	62.5	37.5	N/A	N/A
Curtailment Setpoint (MW)	50	30	72	48
Reference Quantity (MW)	N/A	N/A	N/A	N/A
New Setpoint (MW)	N/A	N/A	N/A	N/A
Active Power Output (MW)	50	30	72	48
Total Output (MW)	200			

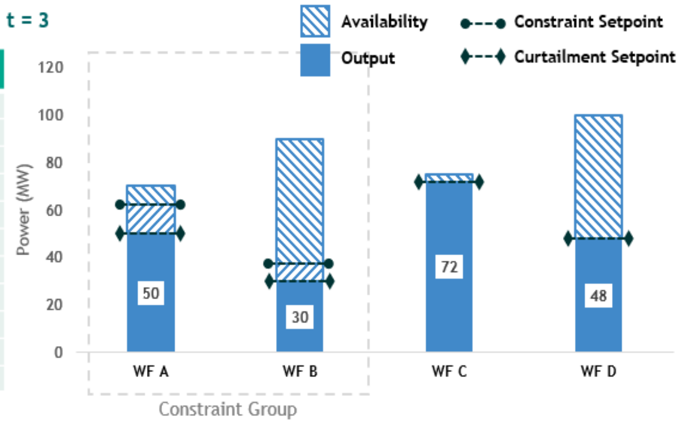

Figure 10 Availability Changes at t = 3

At **t = 4**, the Control Centre decides to initiate curtailment rebalancing across all wind farms. Unit curtailment setpoints for rebalancing are calculated on a pro-rata basis, based on the maximum allowable output for each unit, which is the minimum of its Available Active Power or any active Constraint Setpoint. In this example, rebalancing action is applicable across all units as their current curtailment setpoint is below any active constraint setpoint. The curtailment target remains 200 MW and is re-allocated as shown in *Figure 11*.

t = 4

Rebalance Curtailment				
	WF A	WF B	WF C	WF D
Availability (MW)	70	90	**75**	**100**
Constraint Setpoint (MW)	**62.5**	**37.5**	N/A	N/A
Curtailment Setpoint (MW)	50	30	72	48
Reference Quantity (MW)	62.5	37.5	75	100
New Curtailment Setpoint (MW)	45.5	27.3	54.5	72.7
Active Power Output (MW)	45.5	27.3	54.5	72.7
Total Output (MW)	200			

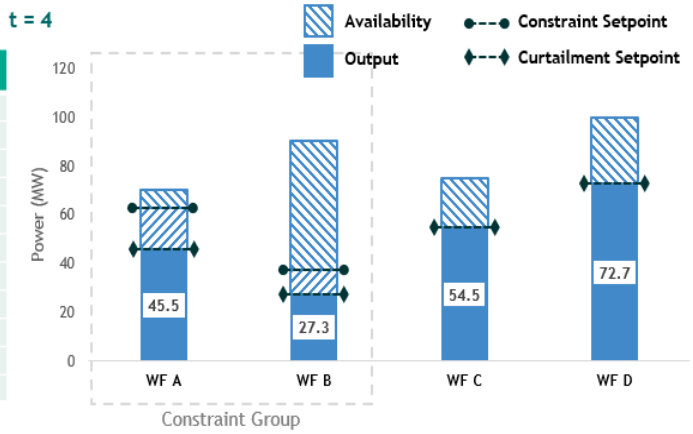

Figure 11 Rebalancing of Curtailment at t = 4

At **t = 5**, the Control Centre removes the curtailment. When curtailment is removed, active constraint setpoints remain in place. As a result, WF A and WF B increase output to their active constraint setpoint, while WF C and WF D, which are unconstrained, return to full availability. This is shown in *Figure 12*.

t = 5

Remove Curtailment				
	WF A	WF B	WF C	WF D
Availability (MW)	70	90	**75**	**100**
Constraint Setpoint (MW)	**62.5**	**37.5**	N/A	N/A
Curtailment Setpoint (MW)	45.5	27.3	54.5	72.7
Reference Quantity (MW)	62.5	37.5	75	100
New Setpoint (MW)	N/A	N/A	N/A	N/A
Active Power Output (MW)	62.5	37.5	75	100
Total Output (MW)	275			

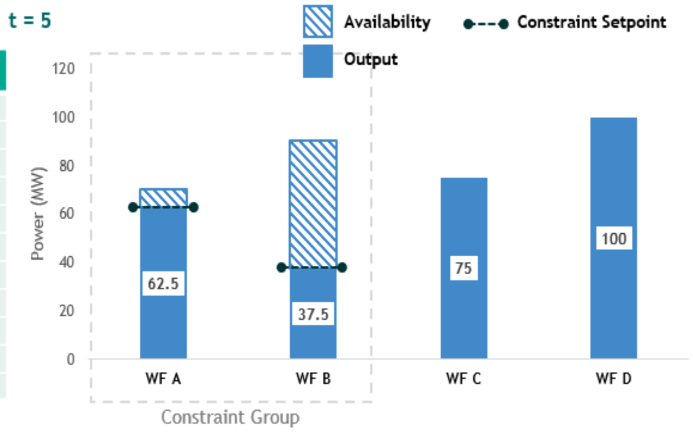

Figure 12 Removal of Curtailment at t = 5

At **t = 6**, the Control Centre decides to initiate rebalancing on the constraint group. Unit constraint setpoints for rebalancing are calculated on a pro-rata basis, where the maximum allowable output for each unit is the minimum of its Available Active Power or active Curtailment Setpoint. The constraint target remains 100 MW and is re-allocated as shown in *Figure 13*.

t = 6

Rebalance Constraint				
	WF A	**WF B**	**WF C**	**WF D**
Availability (MW)	**70**	**90**	75	100
Constraint Setpoint (MW)	62.5	37.5	N/A	N/A
Curtailment Setpoint (MW)	N/A	N/A	N/A	N/A
Reference Quantity (MW)	70	90	N/A	N/A
New Constraint Setpoint (MW)	43.8	56.2	N/A	N/A
Active Power Output (MW)	43.8	56.2	75	100
Total Output (MW)	275			

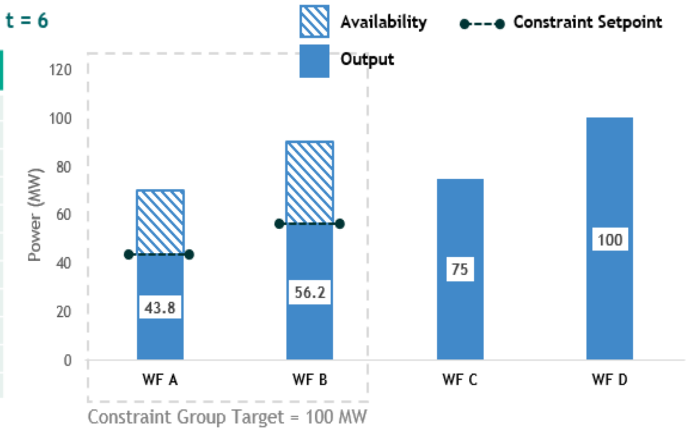

Figure 13 Rebalancing of Constraint at t = 6

5.3 Scenario 3: Rebalancing with Partial Applicability

This scenario shows how the Control Centre will apply rebalancing when multiple setpoints affect different units. It focuses on the interaction between curtailment and constraint setpoints, showing how the Control Centre determines which units are eligible for rebalancing and reallocates output accordingly.

At **t = 0**, all four wind farms operate at their full availability, as shown in *Figure 14.*

t = 0

	WF A	WF B	WF C	WF D
Availability (MW)	100	60	100	50
Constraint Setpoint (MW)	N/A	N/A	N/A	N/A
Curtailment Setpoint (MW)	N/A	N/A	N/A	N/A
Reference Quantity (MW)	N/A	N/A	N/A	N/A
New Setpoint (MW)	N/A	N/A	N/A	N/A
Active Power Output (MW)	100	60	100	50
Total Output (MW)	310			

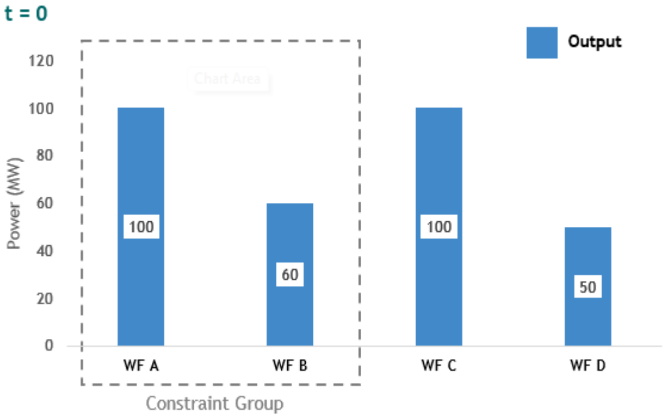

Figure 14 Running to Availability at t = 0

At **t = 1**, the Control Centre applies curtailment to keep the system within its SNSP limit, reducing total wind output from 310 MW to 210 MW. The 100 MW reduction is allocated on a pro-rata basis across WF A, WF B, WF C and WF D, as shown in *Figure 15*.

t = 1

Apply Curtailment, Target (MW) = 210				
	WF A	WF B	WF C	WF D
Availability (MW)	**100**	**60**	**100**	**50**
Constraint Setpoint (MW)	N/A	N/A	N/A	N/A
Curtailment Setpoint (MW)	N/A	N/A	N/A	N/A
Reference Quantity (MW)	100	60	100	50
New Curtailment Setpoint (MW)	67.7	40.6	67.7	33.9
Active Power Output (MW)	67.7	40.6	67.7	33.9
Total Output (MW)	210			

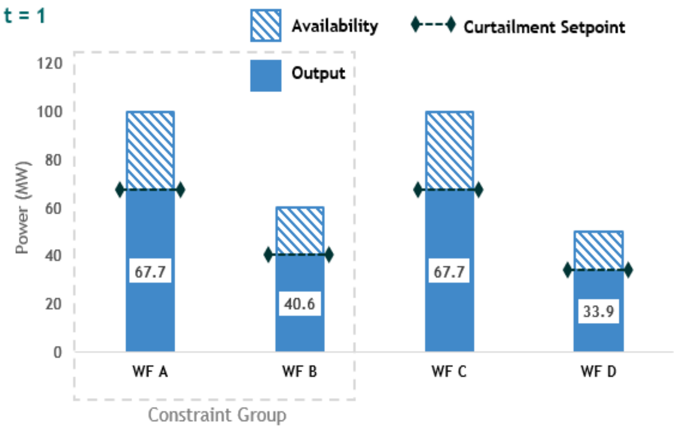

Figure 15 Application of Curtailment at t = 1

At **t = 2**, the Control Centre applies a constraint to maintain system security, reducing the constraint group's output from 108.3 MW to the 60 MW target. The 48.3 MW reduction is allocated on a pro-rata basis, using curtailment setpoints for reference, across WF A and WF B, as shown in *Figure 16*.

t = 2

Apply Constraint, Target (MW) = 60				
	WF A	WF B	WF C	WF D
Availability (MW)	100	60	100	50
Constraint Setpoint (MW)	N/A	N/A	N/A	N/A
Curtailment Setpoint (MW)	**67.7**	**40.6**	67.7	33.9
Reference Quantity (MW)	67.7	40.6	N/A	N/A
New Constraint Setpoint (MW)	37.5	22.5	N/A	N/A
Active Power Output (MW)	37.5	22.5	67.7	33.9
Total Output (MW)	161.6			

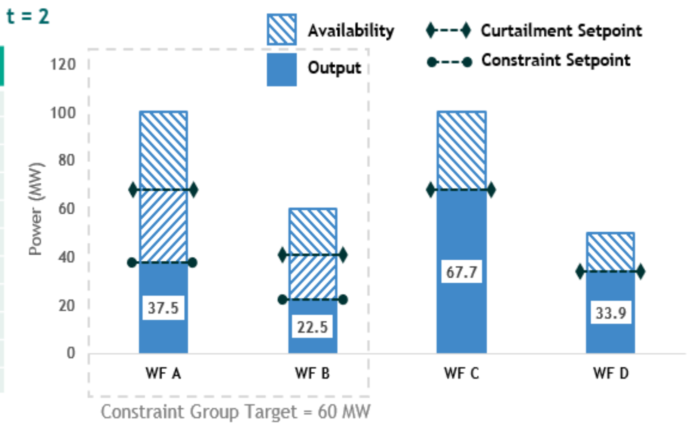

Figure 16 Application of Constraint at t = 2

At **t = 3**, changing weather conditions alter wind farm availability, as shown in *Figure 17*.

t = 3

Availability Changes				
	WF A	WF B	WF C	WF D
Availability (MW)	**70**	**80**	**75**	**90**
Constraint Setpoint (MW)	37.5	22.5	N/A	N/A
Curtailment Setpoint (MW)	67.7	40.6	67.7	33.9
Reference Quantity (MW)	N/A	N/A	N/A	N/A
New Setpoint (MW)	N/A	N/A	N/A	N/A
Active Power Output (MW)	37.5	22.5	67.7	33.9
Total Output (MW)	161.6			

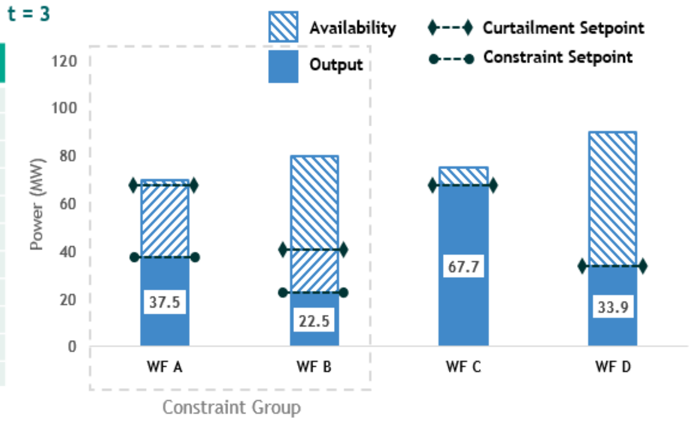

Figure 17 Availability Changes at t = 3

At **t = 4**, the Control Centre decides to initiate curtailment rebalancing across all wind farms. Unit curtailment setpoints for rebalancing are calculated on a pro-rata basis, where the maximum allowable output for each unit is the minimum of its Available Active Power or any active Constraint Setpoint. Also, rebalancing of curtailment is only applicable on units where the current curtailment setpoint is below any active constraint setpoint. Therefore, WF A and WF B are excluded, as their active constraint setpoint is lower than their curtailment setpoint. The rebalancing action applies only to WF C and WF D, and their curtailment setpoints are re-allocated on a pro-rata basis using their updated availability and previous combined output of 101.6 MW, as shown in *Figure 18*.

t = 4

Rebalance Curtailment				
	WF A	WF B	WF C	WF D
Availability (MW)	70	80	**75**	**90**
Constraint Setpoint (MW)	37.5	22.5	N/A	N/A
Curtailment Setpoint (MW)	67.7	40.6	67.7	33.9
Reference Quantity (MW)	N/A	N/A	75	90
New Curtailment Setpoint (MW)	N/A	N/A	46.2	55.4
Active Power Output (MW)	37.5	22.5	46.2	55.4
Total Output (MW)	161.6			

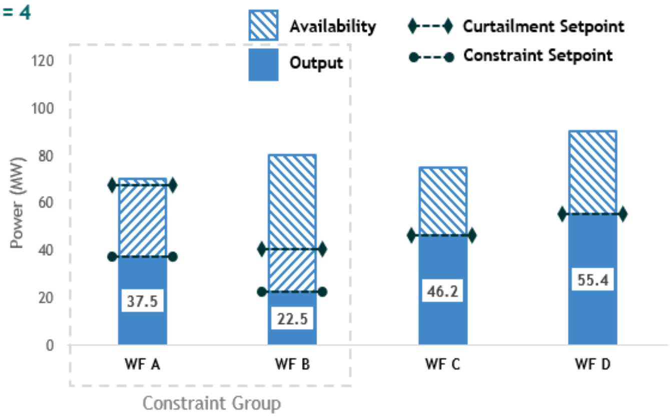

Figure 18 Rebalancing of Curtailment at t = 4

At **t = 5**, the Control Centre removes the constraint. When a constraint is removed, all active curtailment setpoints on units within the constraint group are also lifted (as per current approach). In this example, WF A and WF B, which are part of the constraint group, increase output to full availability, while WF C and WF D continue operating at their active curtailment setpoints, as shown in *Figure 19*.

t = 5

Remove Constraint				
	WF A	WF B	WF C	WF D
Availability (MW)	**70**	**80**	75	90
Constraint Setpoint (MW)	37.5	22.5	N/A	N/A
Curtailment Setpoint (MW)	67.7	40.6	46.2	55.4
Reference Quantity (MW)	N/A	N/A	N/A	N/A
New Setpoint (MW)	N/A	N/A	N/A	N/A
Active Power Output (MW)	70	80	46.2	55.4
Total Output (MW)	251.6			

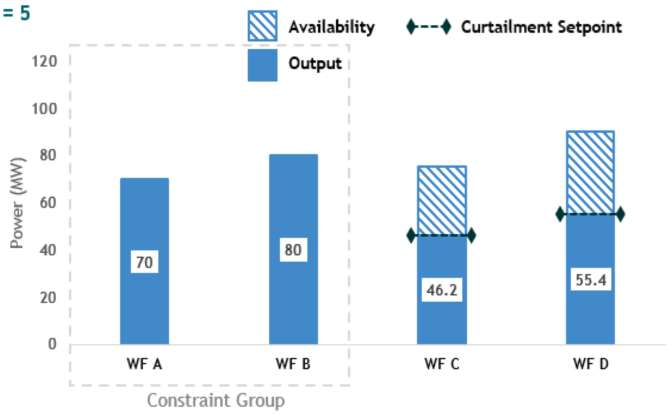

Figure 19 Removal of Constraint at t = 5

5.4 Scenario 4 – Rebalancing with Adjusted Group Target

This scenario shows how the Control Centre will carry out rebalancing when the group constraint target is adjusted following changes in availability. It highlights the reallocation of outputs within the constraint group using pro-rata allocation to ensure the updated target is met.

At **t = 0**, all four wind farms operate at their full availability, as shown in *Figure 20*.

t = 0

	WF A	WF B	WF C	WF D
Availability (MW)	100	90	70	60
Constraint Setpoint (MW)	N/A	N/A	N/A	N/A
Curtailment Setpoint (MW)	N/A	N/A	N/A	N/A
Reference Quantity (MW)	N/A	N/A	N/A	N/A
New Setpoint (MW)	N/A	N/A	N/A	N/A
Active Power Output (MW)	100	90	70	60
Total Output (MW)	**320**			

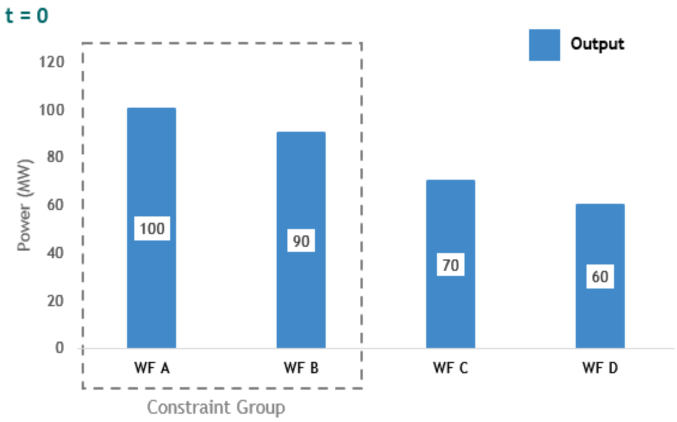

Figure 20 Running to Availability at t = 0

At **t = 1**, the Control Centre applies a constraint to maintain system security, reducing the constraint group's output from 190 MW to the 120 MW target. The 70 MW reduction is allocated on a pro-rata basis across WF A and WF B, as shown in *Figure 21*.

t = 1

Apply Constraint, Target (MW) = 120				
	WF A	**WF B**	**WF C**	**WF D**
Availability (MW)	**100**	**90**	70	60
Constraint Setpoint (MW)	N/A	N/A	N/A	N/A
Curtailment Setpoint (MW)	N/A	N/A	N/A	N/A
Reference Quantity (MW)	100	90	N/A	N/A
New Constraint Setpoint (MW)	63.2	56.8	N/A	N/A
Active Power Output (MW)	63.2	56.8	70	60
Total Output (MW)	**250**			

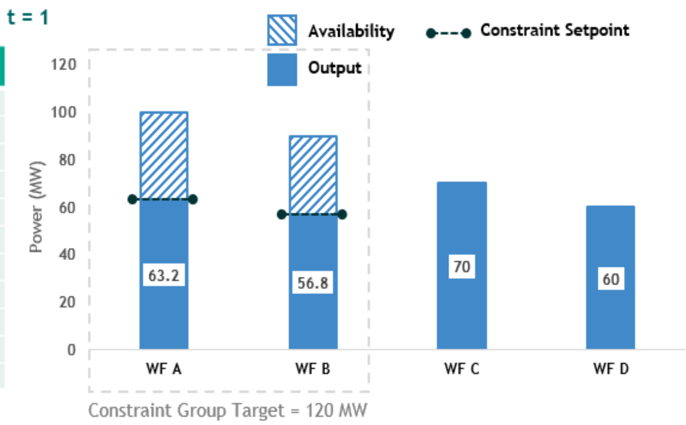

Figure 21 Application of Constraint at t = 1

At **t = 2**, changing weather conditions alter wind farm availability. WF A is now operating at full availability, with an output lower than its previous constraint setpoint, as shown in *Figure 22*.

t = 2

Availability Changes				
	WF A	WF B	WF C	WF D
Availability (MW)	**50**	**110**	**50**	**70**
Constraint Setpoint (MW)	63.2	56.8	N/A	N/A
Curtailment Setpoint (MW)	N/A	N/A	N/A	N/A
Reference Quantity (MW)	N/A	N/A	N/A	N/A
New Constraint Setpoint (MW)	N/A	N/A	N/A	N/A
Active Power Output (MW)	50	56.8	50	70
Total Output (MW)	226.8			

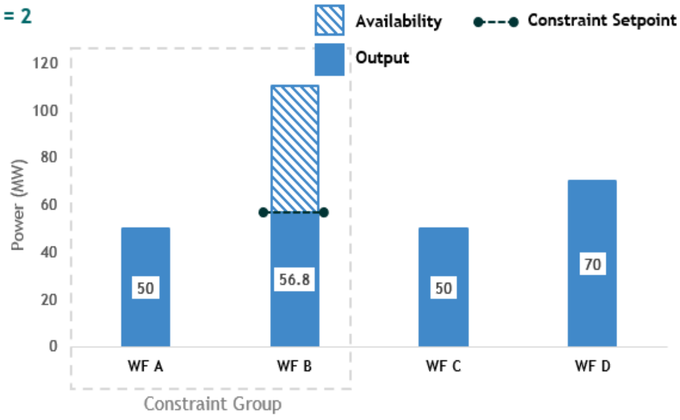

Figure 22 Availability Changes at t = 2

At **t = 3**, the Control Centre decides to initiate rebalancing on the constraint group. Unit constraint setpoints for rebalancing are calculated on a pro-rata basis, where the maximum allowable output for each unit is the minimum of its Available Active Power or active Curtailment Setpoint. The constraint target for rebalancing is 106.8 MW[4] – the constraint group's total output before rebalancing - and is reallocated as shown in *Figure 23*.

t = 3

Rebalance Constraint				
	WF A	WF B	WF C	WF D
Availability (MW)	**50**	**110**	50	70
Constraint Setpoint (MW)	63.2	56.8	N/A	N/A
Curtailment Setpoint (MW)	N/A	N/A	N/A	N/A
Reference Quantity (MW)	50	110	N/A	N/A
New Constraint Setpoint (MW)	N/A	N/A	N/A	N/A
Active Power Output (MW)	33.3	73.5	50	70
Total Output (MW)	226.8			

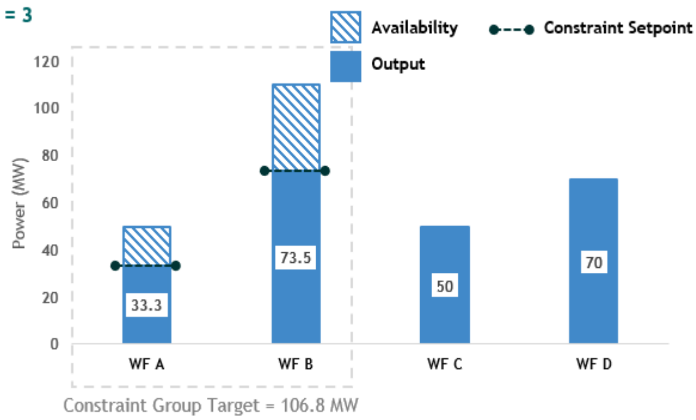

Figure 23 Rebalancing of Constraint at t = 3

[4] If system conditions allow, the overall constraint may be lifted back up to the original target of 120 MW or higher. This will be managed separately, as is currently done, via the standard process for relaxation of a constraint.