Pan Pac Forest Products

Participant Rolling Outage Plan

Full Information Plan

April 2024

Contents

Definitions

AUFLS	Automatic Under Frequency Load Shedding
Authority	The Electricity Authority
Code	The Electricity Industry Participation Code 2010
Developing event	An event that evolves over time, e.g. as the result of a period of unseasonably low inflows to hydro catchments
EMP	The system operators Emergency Management Policy. Current version effective 1 December 2022
GXP	Transpower Grid Exit Point at which the Pan Pac load is connected
GEN	Grid Emergency Notice
Immediate event	An event that occurs with little or no warning, e.g. as a result of a transmission or major power station failure
PROP	Participant Rolling Outage Plan (this plan)
Pan Pac	Pan Pac Forest Products Limited
Rolling Outages	Planned electricity disconnections spread over different parts of the electricity system at differing times to avoid prolonged outages at any one location.
SOROP	System operator rolling outage plan
Supply shortage declaration	Declaration made by the system operator under sub part 2 of Clause 9 of the Code.
System Operator	Operator of the national electricity transmission grid (Transpower)
Transpower	Transpower New Zealand Limited
Transmission line	A high voltage supply line owned and operated by Transpower New Zealand Limited

Associated documents

1. Emergency Management Policy published by the system operator effective 1 December 2022.
2. System Operator Rolling Outage Plan - Issued by the Electricity Commission and effective on 19 June 2016.
3. Pan Pac operational procedures

Purpose of this plan

1. Part 9 of the Electricity Industry Participation Code (the Code) relates to security of supply and includes provisions relating to the system operator rolling outage plan (SOROP) and participant rolling outage plans (PROPs).
2. This plan was written to satisfy the requirements of the Code that relate to PROPs. Clause 9.8 of the Code requires that each PROP must:
   a) be consistent with the system operator rolling outage plan; and
   b) comply with the requirements specified in the notice sent under clause 9.6(2)(a); and
   c) specify the actions that the specified participant will take to achieve, or contribute to achieving, reductions in the consumption of electricity (including any target level of reduction of consumption of electricity in accordance with criteria, methodologies, and principles specified in the system operator rolling outage plan) to comply with a direction from the system operator given under clause 9.15.
3. This PROP covers the following site:

Site name	Physical location	GXP
Pan Pac Forest Products	Whirinaki, Hawke's Bay	WHI 0111

4. This PROP provides details of how Pan Pac Forest Products Limited (Pan Pac) will respond following a supply shortage declaration and how the system operator should communicate any requests for reductions in demand to Pan Pac.
5. The outage plan provides details of the main energy saving measures that can be called on and how these are structured and implemented.

Supply shortage declaration

6. Part 9 Sub part 2 of the Code sets out how supply shortage situations will be managed.

7. Under the provisions of the Code the system operator has powers to direct outages following a supply shortage declaration. As a specified participant Pan Pac must comply with any direction given by the system operator following a supply shortage declaration.

8. A supply shortage declaration may apply to:

   a) All of New Zealand; or

   b) Regions specified in the declaration

9. When a supply security declaration is made Pan Pac must comply with a direction given by the system operator in accordance with this PROP.

10. The system operator may, at any time in the period during which a supply shortage declaration is in force, direct Pan Pac to contribute to achieving reductions in the consumption of electricity by implementing outages or taking any other action specified in the direction.

11. A direction may be communicated through the information system operated by the system operator.

12. The system operator will notify Pan Pac when a supply shortage declaration has been revoked

13. This PROP sets out the actions that Pan Pac will take, who is responsible for implementing the actions and how communications will be managed between Pan Pac and the system operator.

Background

The Electricity Authority

14. The Electricity Authority (Authority) is an independent Crown entity responsible for regulating the New Zealand electricity market. The Authority's objective is to promote competition in, reliable supply by, and the efficient operation of, the electricity industry for the long-term benefit of consumers.

15. The core functions of the Authority are to:
    a) make and administer the Electricity Industry Participation Code 2010 (Code) governing the New Zealand electricity market;
    b) undertake market-facilitation measures (such as providing education, guidelines, information, and model arrangements) and monitor the operation and effectiveness of market- facilitation measures;
    c) monitor and enforce compliance with the Code, and the Act;
    d) proactively monitor the performance of the electricity industry in regard to competition, reliable supply and efficient operation; and
    e) contract service providers to operate the New Zealand electricity system and market in accordance with the Code

Transpower

16. Transpower is a State Owned Enterprise, tasked with owning and operating New Zealand's National Grid - the network of high voltage transmission lines and substations that transports bulk electricity from where it is generated to distribution line companies and directly (grid) connected major electricity consumers.

System operator

17. As system operator, Transpower manages the real-time operation of New Zealand's electricity transmission system by matching supply (generation dispatch) with demand.

Pan Pac

18. The business of Pan Pac is: Growing, processing, and marketing forest-based products to both New Zealand and International markets. Pan Pac produces logs and sawn timber as well as bleached and unbleached thermo-mechanical wood pulp.

19. Pan Pac is wholly owned by Oji Paper, one of the largest pulp and paper companies in the world.

20. Pan Pac operates both a sawmill and mechanical pulpmill at its Whirinaki site, 20km north of Napier. Pan Pac also operate a subsidiary company at Milburn Otago (not part of this PROP).

21. Pan Pac is a direct connect consumer and uses approximately 400GWh electricity per annum. Pan Pac is a Distributor in terms of the AUFLS obligations in the Code. Pan Pac also provides Interruptible Load (IL) for the Ancillary Services Market.

Security of supply events covered by this plan

22. In its Emergency Management Policy, the system operator provides the steps that the system operator will take and the circumstances that will need to exist for a supply security declaration to be made. Those steps provide for a series of last resort emergency measures, which would not be implemented unless there was a significant risk that it would not be possible to meet the demand for electricity on a sustained basis.

23. The types of events likely to require the implementation of the EMP include an extended period of extremely low inflows to hydro catchments, a major asset outage that was expected to be sustained for a long period, or some combination of these events.

24. The EMP describes events that could lead the system operator to make a supply shortage declaration these are:

- **Developing Event** – Events that evolve over time – for example as the result of a period of unseasonably low inflows to hydro catchments; and
- **Immediate Events** –. Events that occur with little or no warning – for example as a result of a transmission or major power station failure, the impact of which are expected to extend over a period of weeks rather than days.

25. Rolling outages under a supply shortage declaration are a last resort measure the system operator may initiate, after consultation with the Authority, only if there is a shortage of electricity supply (generation) or transmission capacity if the system operator considers:

a) that the normal operation of the wholesale market is, or will soon be, unlikely to facilitate the adjustment of supply and demand necessary to ensure that supply matches demand; and

b) that, if planned outages are not implemented, unplanned outages are more likely than not.

Full information & partial information PROPS

26. The System Operator Rolling Outage Plan sets out the following requirements for direct connect PROPs.

***Full information plans**: These plans must contain sufficient information for the system operator to make a decision on the most appropriate savings target for the direct-connect user.*

A direct-connect user's full information plan must inform the system operator about:

- *the nature of the load on site;*
- *whether any load is used to provide other services to the electricity sector such as interruptible load;*
- *the extent to which different levels of savings can be achieved;*
- *the nature of the measures that could be implemented; and*
- *the cost associated with different levels of savings.*

***Partial information plans**: These plans may contain some of the information required for full information plans. If the system operator sets a savings target for a region where there is a direct-connect user with a partial information plan, their savings target will likely be set to achieve the same percentage saving as distribution companies in that region.*

What this PROP contains

27. This PROP includes procedures for managing both developing and immediate category of event.

Section	Content
Communications	Contact details for communications during a supply shortage declaration
Description of Load	A description of the Pan Pac load
Site response	How the site will respond to different types of events including a plan of possible savings
Coordination with the system operator	Sets out how Pan Pac will coordinate with the system operator
Monitoring and reporting	How Pan Pac will monitor and report savings made

28. This PROP contains all the information required for **Full Information Plan**.

Communications

All urgent operational communications should, in the first instance, be made to:

Contact: [redacted]
Phone:

If unable to be contacted, then try:
Contact: [redacted]
Phone:
Mobile:
Email:

The Manager will communicate with the System Operator for operational communications using the following details:

Transpower National Control Centre
Security Desk Duty: 0800 488 500
Energy Desk Duty: 0800 535 123

Communications from the system operator about **supply shortages**, **supply shortage declarations**, **directions** and **rolling outages** should be made to:

Contact: [redacted]
Phone:
Mobile:
Email:

If unable to be contacted, then try:

Contact: [redacted]
Phone:
Mobile:
Email:

The relevant person who the system operator should notify for revocation of the shortage declaration is:

Contact: [redacted]
Phone:
Mobile:
Email:

If unable to be contacted, then try:

Contact: [redacted]
Phone:
Mobile:
Email:

The Pan Pac person responsible for to the System Operator on the performance against the savings target is:

Contact: [redacted]
Phone: [redacted]
Mobile: [redacted]
Email: [redacted]

The relevant Pan Pac people in the above positions will communicate with the System Operator for administration and reporting against the targets using the following details:

Contact: System Operator
Phone: 04 590 7000
Email: system.operator@transpower.co.nz

The Pan Pac person who is responsible for communicating with the media (if required) is:

Contact: [redacted]
Phone: [redacted]
Mobile: [redacted]
Email: [redacted]

Description of site load

29. The site operates continuously 24 x 7. The total electrical demand of the site is approximately 52MW. Due to on-site generation* capability the net load at the grid connection point is approximately 47MW.

30. The electrical loads are:

Load	Description	Approximate Load MW
Refining Plant	The refiner load consists of 6 thermo-mechanical refiner lines each using approximately 7MW depending on the pulp grade being manufactured. Usually only 5 refiner lines are operated at a time. Refiner lines operate 24 hours per day.	35
Lumber Division	Handling and preparation of timber for manufacturing processes	3
Chip Mill	Manufacturing of wood chips from whole logs	1
Boilers	Boilers utilise wood waste and other waste products. Output steam from the boilers is used in process and electricity generation. Continuous operation of the boilers is essential to the refiner processes.	1
Auxiliary loads	General site auxiliary loads (including bleach plant and secondary effluent system)	12
	Site total load	52
	On-site generation*	(5)
	Net load taken from Grid	47

**As of April 2024 the on-site generation is not available due to flood damage from Cyclone Gabrielle. The earliest return to service is 2026.*

31. The refiner loads are offered as interruptible load into the instantaneous reserves market. Interruptible load (both FIR and SIR) is offered based on the number of refining lines operating, and hence typically up to 40MW is offered.

    The offering of instantaneous reserve is undertaken through Enel X New Zealand Ltd acting as agent for Pan Pac.

32. The refiner loads are price responsive and will be shut if the wholesale electricity spot price reaches a price that makes production commercially unviable.

33. Under the AUFLS regime, Pan Pac currently has an approved equivalence arrangement for AUFLS obligations. Under the future 4-block AUFLS Pan Pac will also provide load blocks that will automatically disconnect part of the site load if an emergency underfrequency event is detected at the GXP. This obligation does not affect Pan Pac's ability to offer IL, and it should not affect Pan Pac's ability to provide sustained energy savings under this plan.

How the site will respond

34. The system operator is responsible for making a supply shortage declaration and for directing specified participants to implement rolling outages. Communication of such a declaration and direction to Pan Pac to reduce demand should be given to the following person.

    Contact: [redacted]
    Phone: [redacted]
    Mobile: [redacted]
    Email: [redacted]

    Emails should be copied to [redacted]

35. In practice a declaration pursuant to the Code will be communicated to Pan Pac directly from the system operator. Directions to implement the savings plan (e.g. reduce load) will be made by the System Operator to Pan Pac. Directions to reduce load should be made to:

    Contact: [redacted]
    Phone: [redacted]
    Mobile: [redacted]
    Email: [redacted]
    Emails should be copied to [redacted]

    If unable to be contacted, then contact:

    Contact: [redacted]
    Phone: DDI: [redacted]

36. The above person has the authority to make demand reductions and is responsible for coordinating emergency demand response at Pan Pac and communicating with the System Operator when a directive is in force.

37. The receipt of a direction to save energy will be acknowledged by sending an email to the System operator system.operator@transpower.co.nz

38. Any load that has already been reduced due to a Grid Emergency notification will be considered to have contributed towards the requested savings under a Directive.

39. Any load that is included in the response to a direction will not be offered as instantaneous reserves until the direction has ceased to have effect. It should be noted that there may be a delay in responding to a direction due to the time needed to withdraw load from the instantaneous reserves market.

40. Following receipt of a direction Pan Pac will, as soon as reasonably possible, issue a directive to all staff to reduce all discretionary electricity use. Discretionary means electricity use that does not impact on production and the health and safety of people and security of the site.

41. If further reductions are necessary to meet the direction Pan Pac will implement the savings plan set out in the following section.

Savings Plan

Conservation

42. All Pan Pac staff will be contacted by email and asked to implement a reduction in discretionary electricity use that does not impact on production and the health and safety of people and security of the site.

Rolling Refiner Plant Outage

43. It is likely that the refiner load will have been reduced in response to high wholesale electricity spot prices. If the required percentage savings has already been achieved through reductions in response to spot prices no further savings are to be made.

44. If the refiner loading has not already responded to spot prices and reductions are required to meet the system operator's direction then the following plan will be followed.

45. As Pan Pac sell into the international market the costs of load reduction will heavily depend on business condition at the time. The typical range for cost of load reduction is from $200/MWh to $550/MWh. Under a Developing Event, Pan Pac can provide a more accurate cost for load reduction to the system operator on a confidential basis.

46. Refiners can be removed from load for up to two-four hours without requiring a long restoration period. If an outage is less than two hours then a minimum cost will be incurred (in the range indicated above, $200/MWh to $550/MWh). This assumes the refiners are shut down in a managed and orderly manner. If **multiple** refiners are shut down for longer than two hours a prolonged restoration time of up to 8 hours may be required due to the need to remove solidified materials (flush) and cleaning. Hence, costs for longer periods of outage, beyond two hours could increase by 50% to 200%, therefore cost could be from $300/MWh to over $1000/MWh.

Indicative minimum costs for short outage duration

Load Group	MW Saving	Cumulative MW	Cumulative savings as a % of net load	Cost per hour for short stoppage ($/h)	
				Min ($200/MWh)	Max ($550/MWh)
Refiner line 1	7	7	15%	$1,400	$3,850
Refiner line 2	7	14	30%	$2,800	$7,700
Refiner line 3	7	21	45%	$4,200	$11,550
Refiner line 4	7	28	60%	$5,600	$15,400
Refiner line 5	10	38	81%	$7,000	$19,250
Refiner line 6	Idle				

47. To achieve the required savings target Pan Pac will shut the one or more refiners, for the required specified periods (or cumulative number of periods) in line with the savings target.

48. If the savings have resulted in a reduction in the quantity of interruptible load that Pan Pac can offer as instantaneous reserves, additional costs of the IR revenue foregone should be added to the above costs. These additional costs will be dependent on the reserves market price at the time the savings are made.

49. It should be noted that a time period may be necessary before savings can be made if load has to be withdrawn from the instantaneous reserves market.

50. It is important to note that the above figures are based on assumptions made for a number of variable production levels and cost components. A significant cost is likely to arise if Pan Pac cannot meet contracted deliveries due to the implementation of the savings plan. If a supply shortage declaration is made a current estimate of the cost of savings will be submitted to the system operator.

51. The MW figures above depend on the production conditions of the various plants at the time the request to reduce load is given. The cost figures above depend on the demand for and selling price of various finished products that the company makes. Therefore, the figures given should be considered to be indicative only and it may be appropriate to update them if a supply shortage is declared.

Grid Emergencies

52. In the event that a Grid Emergency is coincident with a request for savings under this PROP it is assumed that the Grid Emergency requirements made by the system operator will take precedence over the PROP savings plan. The level of savings available under this plan will, therefore, be reduced by the level of any load reductions made in response to a Grid Emergency.

53. Once a Grid Emergency has ceased the load savings under this PROP will be recommenced.

Disconnecting and Restoring Load

54. Pan Pac's procedure for disconnecting and reconnecting load (refiners) will follow normal operating procedures for stopping or starting refiners.

55. Pan Pac's maximum planned increase or decrease in demand will not exceed 25MW in any 5-minute period.

56. Pan Pac recognise the need to coordinate the implementation of its outages with the system operator to minimise the risk to unexpected power outcomes. In line with direction and coordination with the system operator Pan Pac will use it best endeavours to minimise the impact of load changes on frequency and voltage stability and also minimise demand changes during times when demand is typically ramping up or down (for example either side of morning and evening peaks).

Coordination with the System Operator

57. Communications from the System Operator for coordination of Pan Pac's operations will be made in the first instance to:

    Contact: Pulpmill Operator
    Phone: DDI: 06 974 5075

58. The Pulpmill Operator will confirm, by telephone to the System Operator, all emails received requesting load reductions under a direction. Load reductions will only be made once telephone confirmation has been made.

Monitoring and reporting

59. Monitoring and reporting for operational purposes will be to the system operator.

60. For major loads, Pan Pac's internally captured data will be used to produce daily or weekly reports of savings achieved.

61. For unmetered loads, savings will be calculated by comparison with an average energy consumption profile and the observed actual loading reductions during a supply shortage event.

62. Monitoring and reporting is the responsibility of the Pulp Management Accountant.

63. Reporting to the system operator will be undertaken as requested or on a weekly basis.

64. Should it be required reporting to the Electricity Authority will be undertaken at intervals as required by the Authority.