

# Transmission Service Requests

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# Agenda



## Requesting Service

- OASIS
- What is Available?
- Obtaining Service
  - Short-Term Service
  - Long-Term Service
  - NITS



## How It Is Used

- Which Type of Service and Why
- Determining Duration of Service



## Project Development

- Challenges
- Case Study
- Possible Solutions

# Requesting Transmission Service



# OASIS

Dashboard Home Transactions ATC/AFC Reports Notices Base Data Admin Misc Window

Home Page x Reservation Summary \*

## Reservation Summary

Filtered By: Provider: BPAT x Increment: YEARLY x Class: FIRM x Status: All-Active x Req Type: ORIGINAL x Time - Active Today Forward: 02/18/2019 - 01/01/3000 x

Provider: BPAT Status: All-Active Increment: YEARLY Source: POR: ALL Time: Active  
 Customer: ALL Assign Ref: Class: FIRM Sink: POD: ALL Path:

TP	Customer ^	Seller	Request Type	Status	Assign Ref	Related Ref	MW Req	MW Grant	Source:	Sink	POR	POD
BPAT	12C8	BPAT	ORIGINAL	CONFIRMED	<a href="#">73983257</a>		99999	0	FCRPS	SODASPRINGSNTDP	BPAPOWER	BPAT.PACW
BPAT	12C8	BPAT	ORIGINAL	CONFIRMED	<a href="#">80147629</a>		99999	99999	FCRPS	HTSPRNGS230CSS	BPAPOWER	BPAT.INWMT
BPAT	150N	BPAT	ORIGINAL	CONFIRMED	<a href="#">71963802</a>		30	0	JOHNDAYINTI500	CALIFOREBRDR	JOHNDAY	COB
BPAT	150N	BPAT	ORIGINAL	CONFIRMED	<a href="#">71963809</a>		30	0	JOHNDAYINTI500	CALIFOREBRDR	JOHNDAY	COB
BPAT	150N	BPAT	ORIGINAL	CONFIRMED	<a href="#">71963821</a>		30	0	JOHNDAYINTI500	CALIFOREBRDR	JOHNDAY	COB
BPAT	150N	BPAT	ORIGINAL	CONFIRMED	<a href="#">71963858</a>		30	0	JOHNDAYINTI500	CALIFOREBRDR	JOHNDAY	COB
BPAT	1855	BPAT	ORIGINAL	CONFIRMED	<a href="#">1801571</a>		99999	99999	FCRPS	BENTREAPACNTDP	BPAPOWER	BPAT.PACW
BPAT	1855	BPAT	ORIGINAL	CONFIRMED	<a href="#">1801572</a>		99999	99999	FCRPS	YAKMPWRNTDP	BPAPOWER	YAKAMAPOWER
BPAT	1855	BPAT	ORIGINAL	CONFIRMED	<a href="#">1801573</a>		99999	99999	FCRPS	YAKMPWRPACNTDP	BPAPOWER	BPAT.PACW
BPAT	ALBI	BPAT	ORIGINAL	CONFIRMED	<a href="#">386492</a>		99999	99999	FCRPS	ALBIONNTDP	BPAPOWER	LAGRANDE
BPAT	ALDE	BPAT	ORIGINAL	CONFIRMED	<a href="#">420982</a>		99999	99999	FCRPS	ALDERNTDP	BPAPOWER	BPAT.TPU
BPAT	ASHL	BPAT	ORIGINAL	CONFIRMED	<a href="#">386166</a>		99999	99999	FCRPS	ASHLANDNTDP	BPAPOWER	BPAT.PACW
BPAT	ASOT	BPAT	ORIGINAL	CONFIRMED	<a href="#">1801532</a>		99999	99999	FCRPS	ASOTINAVANTDP	BPAPOWER	AVA.BPAT
BPAT	ASOT	BPAT	ORIGINAL	CONFIRMED	<a href="#">1801533</a>		99999	99999	FCRPS	ASOTINNTDP	BPAPOWER	CLEARWATER
BPAT	AVST	BPAT	ORIGINAL	CONFIRMED	<a href="#">386841</a>	<a href="#">1414500</a>	250	250	LANCASTER230	JOHNDAYINTI500	LANCASTER	JOHNDAY

- All requests via OASIS

- Allows for transparency

- Customer have the same access

- Establishes the queue

- Updates and status changes

# What is Available?

- All TPs must post TTC and ATC on OASIS
- System Data or Transmission Offering Summary
- Product availability depends on timeframe

Posting Ref	Prov...	System Element	Elemen...	Attrib...	Start Time ^	Stop Time	Value	Units
<a href="#">3743225</a>	PGE	W/PGE/BPAT-PGE//	PATH	FATC	2019-11-01 00:00:00 PD	2019-12-01 00:00:00 PS	1484	MW
<a href="#">3743126</a>	PGE	W/PGE/BPAT-PGE//	PATH	TTC	2019-11-01 00:00:00 PD	2019-12-01 00:00:00 PS	4860	MW
<a href="#">3743226</a>	PGE	W/PGE/BPAT-PGE//	PATH	FATC	2019-12-01 00:00:00 PS	2019-12-31 22:00:00 PS	1484	MW
<a href="#">3743127</a>	PGE	W/PGE/BPAT-PGE//	PATH	TTC	2019-12-01 00:00:00 PS	2019-12-31 22:00:00 PS	4860	MW
<a href="#">770867</a>	PGE	W/PGE/BPAT-PGE//	PATH	TTC	2019-12-31 22:00:00 PS	2020-01-01 00:00:00 PS	4860	MW
<a href="#">770869</a>	PGE	W/PGE/BPAT-PGE//	PATH	FATC	2019-12-31 22:00:00 PS	2020-01-01 00:00:00 PS	1484	MW
<a href="#">1574362</a>	PGE	W/PGE/BPAT-PGE//	PATH	TTC	2020-01-01 00:00:00 PS	2020-02-01 00:00:00 PS	4860	MW
<a href="#">1574366</a>	PGE	W/PGE/BPAT-PGE//	PATH	FATC	2020-01-01 00:00:00 PS	2020-02-01 00:00:00 PS	1078	MW
<a href="#">3743227</a>	PGE	W/PGE/BPAT-PGE//	PATH	FATC	2020-02-01 00:00:00 PS	2020-03-01 00:00:00 PS	1428	MW
<a href="#">3743128</a>	PGE	W/PGE/BPAT-PGE//	PATH	TTC	2020-02-01 00:00:00 PS	2020-03-01 00:00:00 PS	4860	MW
<a href="#">3743228</a>	PGE	W/PGE/BPAT-PGE//	PATH	FATC	2020-03-01 00:00:00 PS	2020-04-01 00:00:00 PD	1428	MW
<a href="#">3743129</a>	PGE	W/PGE/BPAT-PGE//	PATH	TTC	2020-03-01 00:00:00 PS	2020-04-01 00:00:00 PD	4860	MW
<a href="#">3743229</a>	PGE	W/PGE/BPAT-PGE//	PATH	FATC	2020-04-01 00:00:00 PD	2020-05-01 00:00:00 PD	1428	MW
<a href="#">3743130</a>	PGE	W/PGE/BPAT-PGE//	PATH	TTC	2020-04-01 00:00:00 PD	2020-05-01 00:00:00 PD	4860	MW
<a href="#">3743230</a>	PGE	W/PGE/BPAT-PGE//	PATH	FATC	2020-05-01 00:00:00 PD	2020-06-01 00:00:00 PD	1075	MW

# Useful Tools

## System Information

[Interties and External Interconnections in OASIS](#)  
[Proposed Outages](#)  
[Reservation to E-Tag Point Relationships](#)  
[Transmission System Constraints](#)

## Long-Term Availability Transfer Capability

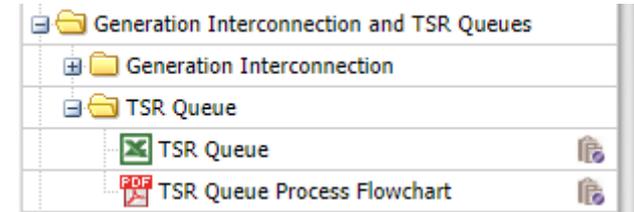
[ATC, AFC and Conditional Firm Inventory](#)  
[AFC/ATC Less Pending Queued Request Inventory](#)  
[Contract Points List](#)  
[Long-Term Pending Queue](#)  
[Long-Term PTFD Calculator](#)  
[Long-Term Power Transfer Distribution Factors \(PTDF\) Table](#)  
[Transmission Reservation & Available Transfer Capability \(ATC\) Analysis Request](#)

## Short-Term Availability Transfer Capability

[Balancing Reserves](#)  
[Short Term Original Transmission Service Request Calculator](#)  
[Short Term Redirect Transmission Service Request Calculator](#)  
[Short-Term PTFD Table](#)

## Outage & Interruption Information:

[Hourly TTC Path Limits](#)  
[Outage Summary](#)



[-] Folder	Generation Interconnection and TSR Queues	
[+] Folder	Generation Interconnection	
[-] Folder	TSR Queue	
[-] File	TSR Queue	[PDF]
[-] File	TSR Queue Process Flowchart	[PDF]



[-] Folder	MAPS	
[-] File	PacifiCorp Path Map	[PDF]
[-] File	PacifiCorp Transmission Network Map	[PDF]
[-] File	PacifiCorp Transmission Network Diagram	[PDF]
[-] File	PacifiCorp Transmission Systems Map w/WECC	[PDF]
[-] File	PacifiCorp Service Territory Map	[PDF]
[-] File	2017 WECC Map of Principal Transmission Line	[PDF]
[-] File	2017 WECC 10 Year Planned Facilities Map	[PDF]
[+] Folder	PACE MAPS	
[+] Folder	PACW MAPS	

- **BPA Transmission Availability Website**
- **Study Queues**
- **Path Maps**
- **All the data is out there**
- **Every customer has the same access**

# Requesting Service

## Point-to-Point

### • Short-Term

- Make request via OASIS
- Checks against current ATC – no studies
- Accepted/Rejected in minutes

### • Long-Term

- Make request via OASIS, submit application, send deposit and wait
- If ATC, contract provided. If no ATC, study process starts or wait in queue
- Study process similar to interconnection
- Can take months or years
- Potential for costly upgrades

## Network

### • Application

- Create application via OASIS
- Add NITS loads
- Add resources, either gen or contracts, and designate as Network Resources

### • Evaluation

- Transmission Provider confirms application is fully complete
- If ATC, contract provided. If no ATC, study process starts or wait in queue
- Study process similar to interconnection
- Can take months or years
- Potential for costly upgrades

# Using Transmission Service



# Which Type of Service and Why

## Point-to-Point (PTP)

- Primarily used for bringing remote generation to interface with host BA
  - Serving load
  - Paired with NITS to complete delivery
- Also used for purchases/sales at Mid-C hub or directly delivered
- Primarily rely on firm due to load service and contractual requirements (e.g. WSPP)
- Can be redirected to other POR/POD combinations

## Network (NITS)

- Primarily used for serving loads within a system or delivering power to load once it is on the same system as the load
- Limitations on how NITS can be used (serving load, attestations, etc.)
- Secondary service exists
  - Used for market purchases for serving load
  - Still high on curtailment priority

# Determining Duration of Service

## Long-Term (Firm)

- Ensures availability when needed most
- Used...
- Point-to-Point
  - Can be deferred, for a fee, up to five times if it is not active
  - Generally request for five years because it provides roll-over rights
  - Redirectable to different path or to short-term products
- Network
  - Easy to manage – based on Network Load
  - Need to have eligible resources or contracts

## Short-Term (Firm & Non-Firm)

- Difficult for defined and persistent needs
  - Less than one-year in duration
  - Cannot purchase far in advance
  - Defined offering window for each type
  - First come, first served. No renewal
- Used primarily for market activity, redirects, and the unforeseen
- Firm and Non-Firm are the same cost
- Non-Firm presents multiple uncertainties
  - Higher curtailment risk
  - Availability based on what other TCs do
  - Has financial/contractual implications

# Project Development



# Challenges

## Remote resources and load pockets

- Long queues and long study processes
- System constraints
- Local generation not always an option (and sometimes a problem)

## Financial and term commitments

- Deposits (application and studies) and fees (deferrals)
- Only way to guarantee future service is to sign five year or longer contract
- Can be an inflexible product
  - Matching timing is difficult
  - Shapability is limited

- Partial service offers
- Redirect risk/uncertainty
- Availability uncertainty

- The principals of Orion Renewable Energy Group have been pioneers in renewable energy in the United States and abroad. **Over 5,000 megawatts (MW) of renewable energy projects have been developed by Orion's management team and are currently in commercial operation.**



- Developer of the 450 MW Biglow Wind Farm in Sherman County, OR, owned and operated by Portland General Electric.
- Developer of the 750 MW Clearwater Wind Farm in Rosebud County, MT.

**Any development needs to justify its existence based on some basic criteria:**

- Does the project have a good resource?
- Is it permittable?
- Can the land be obtained?
- **Last, but not least: Can it access markets economically?**

*All of the above will determine if a project is competitive, i.e. its price of power.*

# SIMILARITIES ACROSS SYSTEMS

- ❑ **Even in RTO's it's complicated, timely, and costly. From request to interconnection agreement:**
  - PJM: 2+ years
  - MISO: 2+ years
  - SPP: 3+ years
  
- ❑ **Hefty security deposits are required prior to knowing results and substantial cash is at risk as a request progresses through the process, regardless of outcome.**
  
- ❑ **The big differences between the RTO/ISO's and the PNW:**
  - 1) *The PNW has "legacy systems".*
  - 2) *An RTO is a one stop shop for interconnection & transmission service. No "daisy-chain" or multiple wheels.*
  - 3) *Before committing to any level of service, in an RTO you know how much you'll receive and at what cost.*

# TRANSMISSION SERVICE

*Without securing firm point-to-point transmission there usually is no project (because it's not typically financeable). In the PNW, this presents several hurdles for developers both in BPA and out of the main system.*

## COMMON ISSUES:

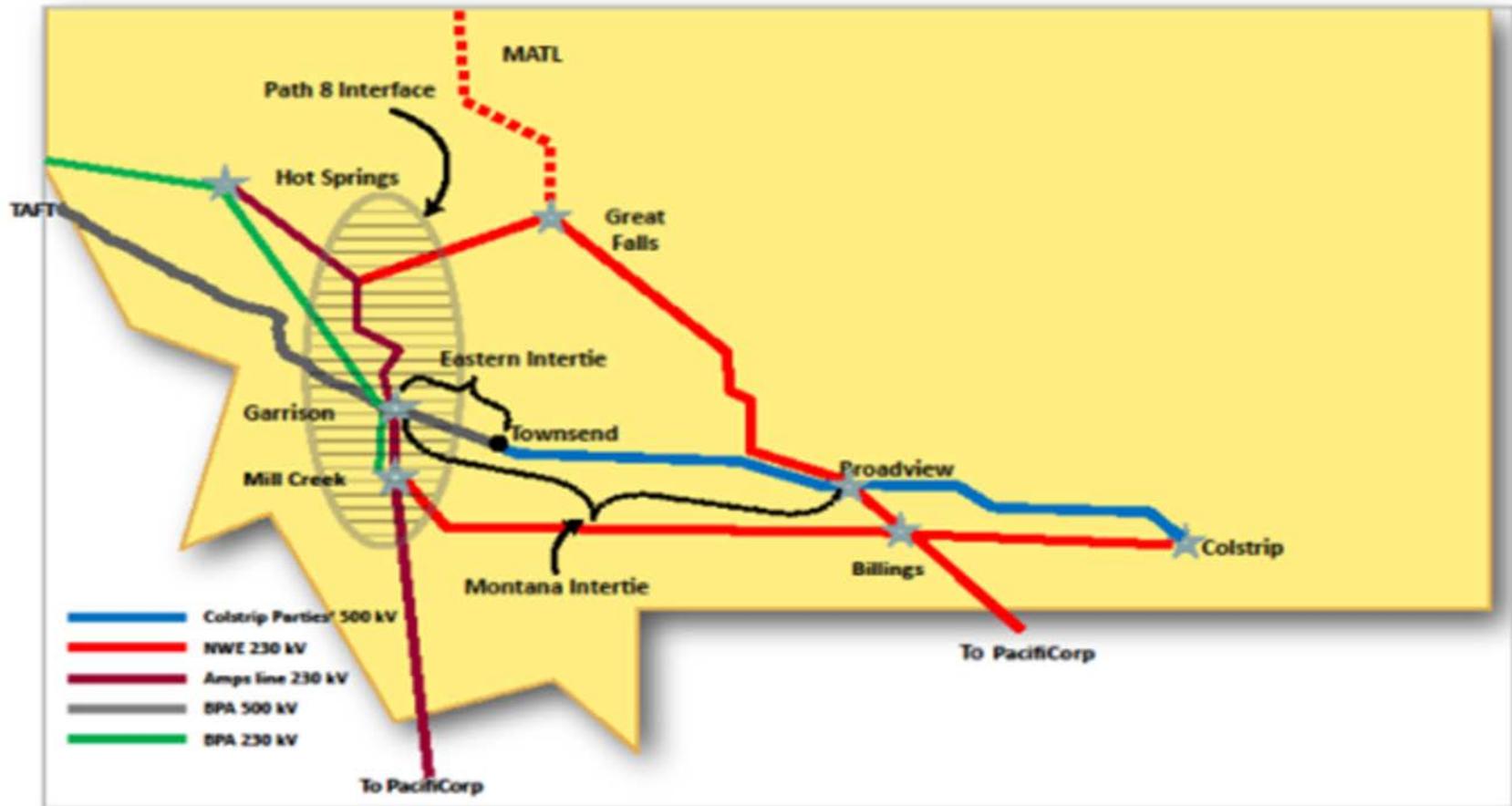
- **Limited firm point-to-point capacity...**
- **Study Timelines & Costs:** Studies can take a long time. Developers must pay for engineering studies and NEPA costs to stay in the queue if an upgrade(s) is identified.
- **Impacts on transmission capacity due to retiring generation resources might make identified upgrades (and their costs) moot, but the timing might not be in the developer's favor.**
- **Partial Offer:** You might be offered less than you need, but still be forced to take it to remain in the queue.
- **Transmission Customers shoulder all of the cost risk.**

## *Double the trouble. In addition to the what I just mentioned...*

- **Transmission queues are not connected despite needing to cross multiple systems to reach market. Meaning:**
  - Studies, timelines, and contracts are not coordinated requiring a developer to potentially hold transmission rights (typically 5+ years worth) on one system with no guarantee of obtaining the mirrored rights on the neighboring system.
- **Differences in requirements: scheduling, Remedial Action Schemes (RAS) needs, etc.**
- **How to use unused rights: If it's a legacy system, even if subject to an OATT, who owns what and how third parties have access to rights at what cost can still be a work in progress.**

# CASE STUDY: MONTANA

**Good news is: the line already exists...**



**...Bad news is: that was the easy part.**

# CASE STUDY: MONTANA



**Question: Why bother now?**

**Answer: The wind blows really strong, when Oregon power customers really need it (MRDAP also helped answer a lot of questions).**

- ✓ Cheap power at peak load demand
- ✓ Capacity benefits
- ✓ Potentially lower system integration costs
- ✓ Perfect candidate for increasing system efficiency through “less-than-firm” transmission products

# SOLUTIONS: CHICKEN OR EGG?



If everyone agrees that there are benefits to resource diversification then a solution to an old PNW paradox needs to be solved:

***Power customers need firm transmission to procure resources; transmission owners need certainty that there's an end power customer to offer firm transmission service.***

## HOW? WHILE THERE IS NO SILVER BULLET...

- TO's should continue the work they're doing in finding new ATC solutions to make better use of the existing system and creating less-than-firm products.
- Oregon has sophisticated power customers who understand and can finance around complicated transmission problems. Allow them to utilize new transmission service products for the right resources in procurement cycles. BPA will be a partner.
- Really Long-Term: Adopt some aspects of an RTO (queue coordination, integration and scheduling standardization, etc.) that will lessen risk to developers, increase access to economical renewables, and lower costs to rate-payers.

# Please Save Questions For The Panel Q&A

