

THE TRANSMISSION BUSINESS MODEL

WE ENERGIZE THE PACIFIC NORTHWEST

Transmission Value Proposition

Operating a High Performing Grid Enabling Economic Growth in the Region Providing Access to Federal and Non-Federal Resources And Markets

Through Excellence

Product Portfolio: Providing standardized options, Value-based price profiles, Drawing from integrated regional planning
Infrastructure: Advanced situational awareness, Right-sized investments in assets, Value and risk-based asset management
Long-Term Viability: Integrated and efficient processes, Data-driven decision making, Innovation and continuous improvement

A Dependable and Responsive Business Partner



Safety Trustworthy Stewardship Collaborative Relationships Operational Excellence

Working Draft, Pre-Decisional Version 4.0

June 2018

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Version Change Log

Summary of changes from working draft v.3.0:

Chapter 1 – Inserted new chapter, The Agency Strategy

Chapter 2 – No changes

Chapter 3 – No changes

Chapter 4 – Explains difference between a business model and a strategy

Chapter 5 – No changes

Chapter 6 – Identified agency strategy connections in each Focus Area and Outcome

Chapter 7 – Removed “Conclusion” section

Chapter 8 – Created new chapter, acknowledging authorship

Appendix – No changes

Letter from the Senior Vice President: The Need for Change¹

As I reflect on the future of Transmission, I want to pause and highlight two of the key components of Bonneville Power Administration's Mission:

- The Bonneville Power Administration's mission as a public service organization is to create and deliver the best value for our customers and constituents ...
- A transmission system that is adequate to the task of integrating and transmitting power from federal and non-federal generating units, providing service to BPA's customers, and maintaining electrical reliability and stability...

I highlight these excerpts from Bonneville's Mission because it serves as the guiding light for our organization. "The mission and vision of an organization is its lifeline to sustainability. They establish its purpose of being today and aspiration of tomorrow. A clear mission offers organizations a pragmatic lens for every day decision-making."²

This is particularly important as the agency continues to facilitate a dialogue with our customers and stakeholders focused on the future and how we continue providing value to the region. This will inform BPA with a longer view, beyond our standard rate period by rate period analyses, reflected in our 2-year Integrated Program Review (IPR) cycle, which now integrates both long-term capital forecasts and near-term program spending levels into one forum, and addresses our aging infrastructure, evolving customer needs, long-term financial health and BPA's value propositions.

In the summer of 2016, the Lead Team reviewed the landscape in which we operate, drivers acting upon it and potential implications for BPA and its customers. We came to the following important conclusions:

- Transmission exists in an increasingly dynamic, uncertain and quickly changing environment
- We have diverse customers with complex needs, some of which may be at odds with each other under our current products and services portfolio

"The mission and vision of an organization is its lifeline to sustainability. They establish its purpose of being today and aspiration of tomorrow. A clear mission offers organizations a pragmatic lens for every day decision-making"

¹ Transmission Quarterly Report - SVP Message - Q1 2017

² The Importance of Mission and Vision - Craig Pladson August 29, 2011

<http://craigpladson.com/craig-pladson-blog/the-importance-of-mission-and-vision>

- We are facing capital and expense pressures and our system is aging and becoming more constrained

These conclusions demand a responsive and modern approach to the way we position ourselves commercially (create value) and how we align as a Transmission organization to deliver (deliver and capture value).

Ultimately, our objective is to remain the transmission service provider of choice, by assuring we maintain financial strength and competitiveness, while continuing to meet our multiple statutory responsibilities and delivering the public benefits that are so valuable to the region.

A handwritten signature in black ink, appearing to read "Richard", is positioned to the right of the main text block.

1. The Agency Strategy

In January 2018 the agency produced its five year strategic plan detailing the intended approach towards delivering on its public responsibilities through a commercially successful business over a five year timeline from 2018 to 2023.

Like the Transmission Business Model, the Strategic Plan was created to understand and meet the needs of customers of the agency. The Transmission Business Model, and its areas of focus were key inputs to the formation of this strategy, creating natural connections between the two major change initiatives.

A Shared Motivation for Change for One Agency

Perhaps the most important connection between the agency strategy and the Transmission Business Model are the imperatives of changing business requirements. As identified in the opening letter from the Transmission Senior Vice President, these are:

- Transmission exists in an increasingly dynamic, uncertain and quickly changing environment
- We have diverse customers with complex needs, some of which may be at odds with each other under our current products and services portfolio
- We are facing capital and expense pressures and our system is aging and becoming more constrained

Similar Areas of Focus

The Transmission Business Model responds to these in ways detailed in the previous pages. The agency strategy has identified four enterprise wide goals, each with their own objectives.

Agency Strategy: Goals and Objectives			
1) Strengthen financial health	2) Modernize assets and system operations	3) Provide competitive Power products and services	4) Meet Transmission customer needs efficiently and responsively
1a) Improve cost-management discipline	2a) Administer an industry-leading asset management program	3a) Increase power revenues through new market opportunities for clean capacity	4a) Address load service, congestion and new transmission service requests by using flexible, scalable, cost-effective and efficient solutions
1b) Build financial resiliency	2b) Modernize federal power and transmission system operations and supporting technology	3b) Address market and regulatory barriers to capturing the clean energy and capacity value of the Federal Columbia River Power System	4b) Develop and implement policies, pricing and procedures for regional planning that incentivize grid optimization and efficient regional resource development
1c) Independent financial health assessment		3c) Prioritize fish and wildlife investments based on biological effectiveness and mitigation for FCRPS impacts; and manage fish and wildlife program costs at or below inflation, inclusive of new obligations and commitments	4c) Meet current and future needs of Network Integration Transmission Service customers through clear business practices and streamlined processes
		3d) Assure that energy efficiency and demand response investments are aligned with the long-term needs of BPA and its customers	4d) Offer more standardized products and services by better aligning BPA's Open Access Transmission Tariff with pro forma and industry best practices
		3e) Modernize the Columbia River Treaty	

Clear Connections

The Transmission Business Model defines how value is created, delivered and captured, beginning with the Value Proposition for customers, defined in three tenets. These are delivered through three Focus Areas (Product Portfolio, Infrastructure, and Long-Term Viability), where investments and changes are required. Each Focus Area has a set of Outcomes, which describe successful results of those investments and changes. Detailed connections between the agency strategy and the Transmission Business Model will be described in each Focus Area Outcome.

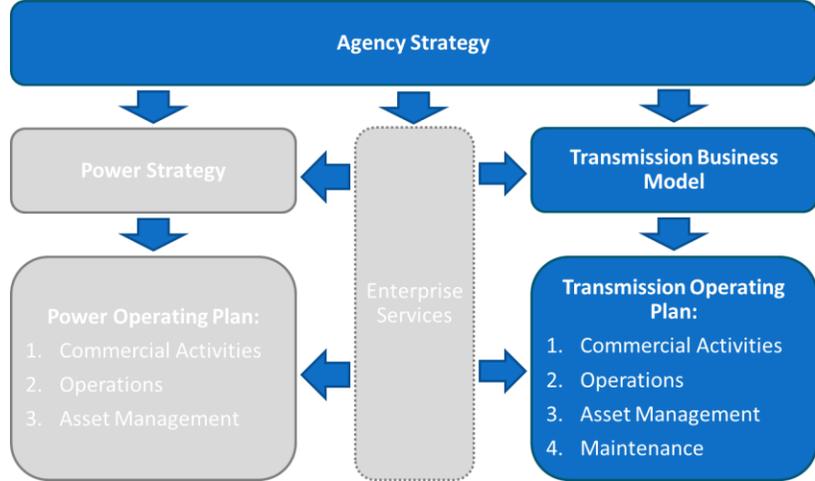


There are clear connections between the agency strategy and Transmission’s Business Model, and you will see these connections in all three Focus Areas:

- The Product Portfolio is a key lever to meeting customer needs efficiently and responsively
- Delivering a high performing grid requires both advanced situational awareness and modernizing assets & system operations
- The Administration of an industry leading asset management program will depend on the right-sized investments in assets and value and risk-based asset management
- Financial results that sustainably improve the health of the agency require an integrated approach towards efficient process management, decision-making driven by data and a commitment to innovation and continuous improvement

Operating Plans

As these changes are implemented, their success will be judged by and reflected to customers via key performance indicators called out in the agency strategy. Important to achieving both the Transmission Business Model and the agency strategy is the development of operating plans. The Power and Transmission Operating Plans (and embedded program plans) will provide an integrated view of the business, workforce, financial performance and risk management of each major cross-agency function.



2. Context for Transmission Services

BPA has a very rich history that is deeply rooted in its statutes, which include the Bonneville Project Act, the Pacific Northwest Consumer Power Preference Act, the Federal Columbia River Transmission System Act, and the Pacific Northwest Electric Power Planning and Conservation Act. Since its inception, BPA has built, operated, and maintained a reliable transmission system to deliver Federal and non-Federal power to its customers.

Since 1996, BPA has offered all transmission services to its customers under generally applicable terms and conditions. In 1996, the Federal Energy Regulatory Commission (FERC) issued Orders No. 888 and 889. Under Order No. 888, FERC required public utilities, as defined by the Federal Power Act, to provide open access transmission service on a basis comparable to the transmission service they provide themselves using standard, non-discriminatory terms and conditions for transmission service. The standard terms and conditions were contained in the *pro forma* Open Access Transmission Tariff. Every public utility that owned, controlled or operated facilities used for transmitting electric energy in interstate commerce was required to adopt and file a tariff with FERC. FERC also created “reciprocity” safe harbor status as an incentive for non-public utilities like BPA to voluntarily adopt open access and the *pro forma* tariff. FERC stated that if non-public utilities offered open access transmission service, public utilities must offer them open access in return.

Under Order No. 889, FERC required public utilities to adopt Standards of Conduct to separate their transmission operations and reliability functions from their wholesale marketing/merchant functions and to establish an Open Access Same-time Information System known as “OASIS” to act as a portal for public utilities to post their tariffs for customers to find.

Although not required by FERC or statute, in 1996, BPA voluntarily adopted an Open Access Transmission Tariff with certain modifications, established an OASIS, and adopted standards of conduct. These decisions were based on several directives or assumptions, including:

- BPA would separate its transmission function from its power function and become the Regional Transmission Organization or Independent System Operator in the Pacific Northwest;
- A 1995 Department of Energy memo directing power marketing administrations, including BPA, to support FERC’s effort for national open access;
- Additional assumptions stated in BPA’s 1995 business plan.
- BPA could meet its statutory obligations under the open access transmission provisions.

BPA submitted its tariff to FERC and received reciprocity safe harbor status.

In 2007, FERC revisited its open access transmission policies and issued Order No. 890 to ensure that transmission services under the *pro forma* tariff are provided on a basis that is just, reasonable, and not unduly discriminatory. Like FERC's prior orders, BPA was not required to adopt FERC's *pro forma* revisions to its tariff. Nevertheless, BPA attempted to do so and made several submissions to FERC requesting approval under the reciprocity safe harbor process. The submissions adopted most FERC Order 890 requirements, but included alternative proposals in certain areas. In 2013, FERC approved BPA's tariff in part, but declined to grant BPA reciprocity safe harbor status because of BPA's alternative proposals.

In 2014, BPA focused on critical areas where there were perceived tensions or conflicts between BPA's obligations to its regional preference customers and its obligations under its Tariff that required greater clarity, resolution, and direction. The dialogue centered on BPA's ability to fulfill its mission and meet its multiple statutory obligations as the industry evolved and external forces continued to affect BPA's traditional business model (2015 Strategic Intent Paper).³ In the 2015 Strategic Intent Paper, BPA affirmed that its preference customers are its core constituency. BPA concluded that it would continue to offer non-discriminatory transmission service through the BPA Tariff and aspire to meet the spirit and letter of the FERC's *pro forma* tariff by implementing a comprehensive BPA Tariff compliance program.

In 2016, BPA opened a stakeholder dialogue with respect to the future of its Tariff and indicated its intent to no longer seek reciprocity safe harbor status from FERC. BPA communicated with stakeholders that it believed the safe harbor process is no longer a tenable approach for making changes to the BPA Tariff and that BPA would instead make changes through a regional public process.

In January 2018, BPA informed the region that the public process it would employ for tariff changes would follow the procedural requirements of Section 212(1)(2)(A) of the Federal Power Act (Section 212). BPA also reaffirmed its commitment to offering transmission service under its tariff based on FERC's *pro forma* tariff to the extent possible in its 2018-2021 Strategic Plan. BPA expects to propose new terms and conditions for transmission service in the upcoming TC-20 Tariff Terms and Conditions proceeding this Fall.

³ Clarifying BPA Obligations Strategic Intent Paper – 1/29/15. This paper was the result of 6-9 months of meetings followed up on with this writing.

3. The Transmission Mission⁴

Transmission Excellence is a top priority for us as a Transmission organization in delivering our Mission. It is our vision for delivering the multiple objectives Transmission is accountable for: the Federal Columbia River Transmission System, supporting BPA’s Strategic Plan, delivering on the Transmission Strategies, continuing the excellent legacy of Transmission reliability and service to the region, and repaying the Federal investment. How Transmission continues to position itself to be the provider of choice in the future is central to our current BPA focus delivering on our public responsibilities through a commercially successful business (see BPA 2018-2023 Strategic Plan).

As part of the overall agency strategy, we are defining the new business model – how we create, deliver and capture value - for Transmission with a predominant focus on how we serve our customers’ needs. An inextricable part of this business model is the integration and deepened understanding of our tariff responsibilities across the organization. As such, it is an opportunity to think holistically about our business and its long-term health and viability in the region. It will require us to anticipate, respond to and lead change that is necessary to stay focused on reliability while capturing commercial benefit for the region, consistent with statutory obligations.

“It will require us to anticipate, respond to and lead change that is necessary to stay focused on reliability while capturing commercial benefit for the region, consistent with statutory obligations.”

In the summer of 2016, a lead team started reassessing the Transmission Business Model – the way we create, deliver and capture value for our customers and the region. We reviewed the landscape we operate in, drivers acting upon it and potential implications for BPA and its customers. Important conclusions of the reassessment include:

- Transmission exists in an increasingly dynamic, uncertain and quickly changing environment. In just the last five years, the industry has seen immense changes in traditional operational, marketing and planning practices. These include the emergence in the Western Interconnection of energy imbalance markets, rapidly declining costs of renewable generation resources, oversupply of energy within the region, increased amount of negative market prices, transactive energy and movement towards smart-grids, and an evolving regulatory environment responding to retail customer self-supply and distributed energy.

⁴ Transmission Quarterly Report - SVP Message – Q1 2016

- We have diverse customers with complex needs, some of which may be at odds with each other under our current products and services portfolio. Our customers and the Western Interconnection’s thirty-eight balancing areas have more individualized needs in order to respond to market opportunities/disruptions, such as new regulations, technologies, and generation supply choices.
- We are facing capital and expense pressures and our system is aging and becoming more constrained. Similar to our customers, the cost of doing business⁵ continues to increase over time, while traditional revenue growth is stagnating. In addition, the majority of our infrastructure is over 50 years old, which requires additional maintenance and/or replacement at a time when borrowing authority is constrained and debt service already makes up approximately 50% of the transmission rate.

These observations demand a responsive and modern approach to the way we position ourselves commercially (create value) and how we align as an operationally excellent Transmission organization (deliver value).

Additionally, changing conditions and customers’ needs will require us to adapt and evolve in order to achieve our mission. This includes having a clear value proposition and associated business model with a deep commitment to transparency and collaboration. In addition, the Transmission’s Business Model supports BPA’s Strategic Plan and builds on the agency’s four values: Safety, Trustworthy Stewardship, Collaborative Relationships and Operational Excellence.

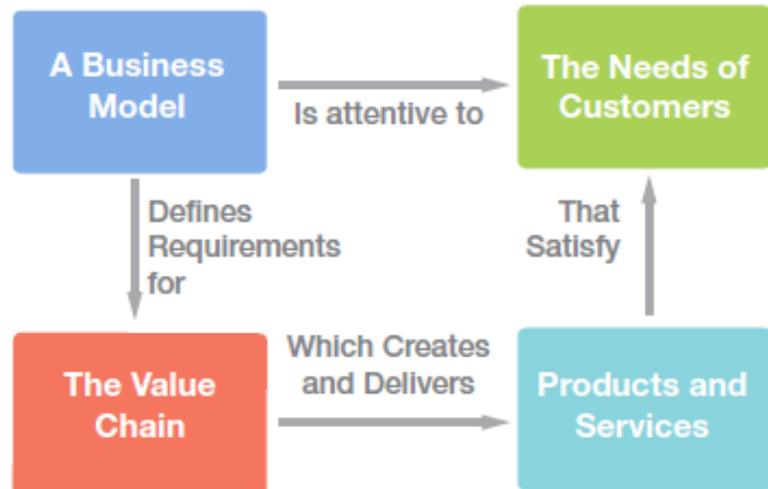
⁵ For example, increased costs include inflationary pressures on labor, increasing compliance obligations, and additional mitigation due to increased cyber security risks.

4. Business Model Framework

BPA Transmission adopted a methodology to define the Transmission **Value Proposition**, which clearly identifies the advantages customers receive by doing business with us. Once articulated, we were able to craft the associated business model to deliver the Value Proposition.

There are four key elements that make up the basic system of all businesses.

An assessment of these areas conveys an understanding of a **business model** that describes how an organization creates, delivers, and captures value, either economically, socially or culturally.⁶ It is attentive to the **needs of customers**, which are what your customers value, how they might achieve it, and what stands in their way.⁷ The customers' needs are satisfied by **products and services**, which are anything that can be offered to a market for attention, acquisition, use or consumption that might satisfy a want or need. They include physical objects, services, persons, places, organization and ideas.⁸ These are created and delivered by a **value chain**, which is a set of activities calibrated to deliver valuable products or services for the market to accomplish its business model.⁹



A key component to a transmission provider's business model is the administration of a tariff. When FERC created the *pro forma* tariff in 1996, its purpose was to standardize the terms and conditions for transmission service to ensure public utilities would offer transmission service on a comparable and not unduly discriminatory or preferential basis to other utilities. Although FERC's *pro forma* tariff is not imposed on BPA, we believe that there is value in adopting the FERC *pro forma* tariff for our transmission services to the extent possible. In addition, it is a critical step to achieving this vision and in executing the agency's strategic plan. Through this tariff, we offer open access transmission service that is consistent with industry products, services, and standards.

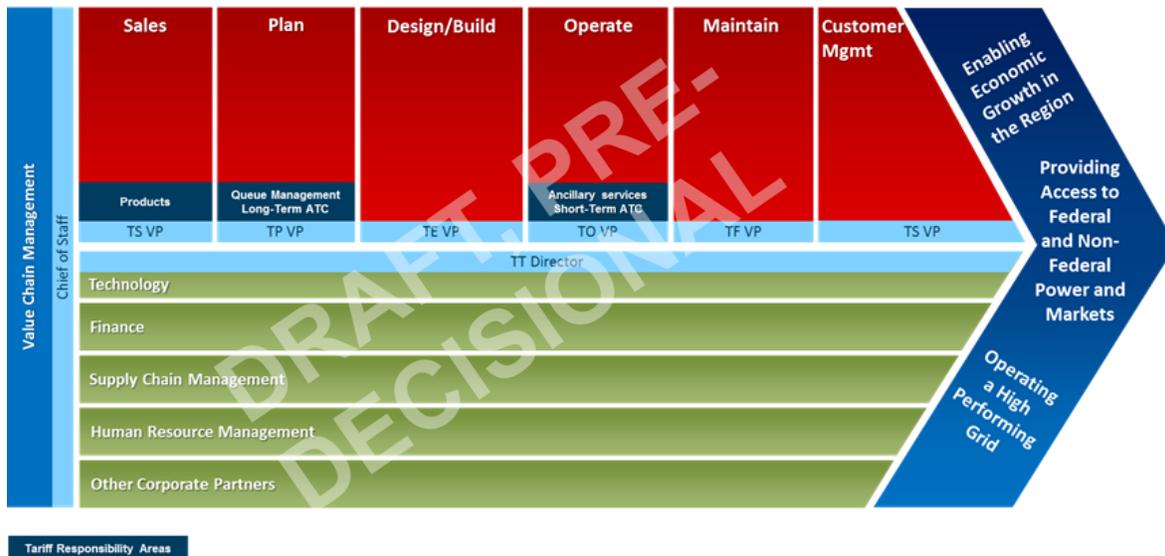
⁶ Yves Pigneur, *Université de Lausanne*

⁷ Frances X. Frei, *Harvard Business School*

⁸ Philip Kotler, *Kellogg School of Management*

⁹ Michael Porter, *Harvard Business School*

The value chain below illustrates the necessary throughput of major functions, as well as the responsible lead VP, in order to run a transmission business.



This diagram is useful for understanding the entire business system with the required primary and supporting functions. However, it does not show the integration, cross-pollination and teamwork expected and required from all staff, managers and VPs to achieve and sustain the Transmission Business Model.

By applying the above framework, we have defined the Transmission Value Proposition and the associated business model Focus Areas in the next chapter.

Integrated Solutions with Important Differences

The Transmission Business Model explains how it makes money, who it serves, and what areas the leadership will focus on in years to come. Getting there requires cycles of strategic planning, so that it is current in an ever changing world. Understanding these differences in both the motivation and function of a strategy and a business model will help clarify measures of success and management of resources.

Strategy	Business Model
Directly asserts change across an entire enterprise	Describes the creation, delivery and capture of value
Is bounded by a specific timeframe	Is operated over timelines determined by the markets it creates and serves
Once its goals and objectives are met, the strategy will be considered finished	Requires constant management attention to create and sustain the value it envisions

5. Transmission Value Proposition

The Transmission Business Model combines our rich legacy of talent, expertise, innovation and technology with an understanding of our customers' changing needs. Transmission will ensure business certainty and stability for our customers by offering our product portfolio and standardized options under a comprehensive open access transmission tariff, modeled to the extent possible after FERC's *pro forma* tariff. Transmission will aggressively pursue cost savings, efficiency and revenue creation opportunities. Delivering energy to load in a safe, reliable, and environmentally conscientious manner will continue to be foundational.

Transmission believes that all of these are paramount to being a **dependable and responsive business partner** with our customers.

In keeping with BPA's Strategic Goals, the key tenets of the Transmission Business Model's Value Proposition and their connection to the agency key strategic priorities are:

- Operating a High Performing Grid;
- Enabling Economic Growth in the Region; and
- Providing Access to Federal and Non-Federal Resources and Markets.

Operating a High Performing Grid

Transmission will maximize grid availability, utilization and reliability through best practice processes, tools and capabilities. This will enable us to market grid capabilities and flexibilities to benefit our customers and the region. We will also incentivize and partner with our customers to strategically diversify and pair resources to optimize grid utilization.

In achieving a high performing grid Transmission will also explore strategic commercial and operational partnerships to benefit our customers and the region.

Enabling Economic Growth in the Region

BPA’s transmission system is critical to enabling economic growth in the Pacific Northwest. To support the broader economic development goals of the region, BPA will provide transmission system information proactively to identify incentives and inform customer decisions regarding resource and load siting, planning, and transmission service options. BPA will make investments in its transmission system as appropriate for the resource and load service needs of its customers. BPA will also provide customers with transparent cost allocation information for system expansion needs. Transmission will work with organizations and communities in our region as they promote economic growth, including use of new programs and technologies¹⁰, to strategically build and expand access to BPA’s Transmission Services infrastructure.

Providing Access to Federal and Non-Federal Resources and Markets

Customer access to diverse resource¹¹ options and interconnections are more important than ever.

Transmission will invest in operationally and financially beneficial solutions that provide access to resources and markets for our customers, whether non-wires or wires options. In collaboration with our customers and within our statutory bounds, we will work to strategically increase the amount, ability and ease of access to resources and markets across the region, capturing economies of scale in being the transmission “backbone” of the Pacific Northwest. This includes policy, rate and technical actions to manage congestion.

¹⁰ E.g, DER, electric vehicles, storage, etc.

¹¹ For example, new solar and wind generating resources.

Enhanced Customer Experience

Delivering this Value Proposition ensures that customers have a consistent experience of BPA being a **dependable and responsive business partner**. Specifically, we define success when customers' say the following:

I trust BPA's agility to partner with me in an innovative manner to respond to a changing environment.

I know that BPA will design clear and standard products that are developed with customers' needs in mind.

I experience meaningful engagement when Bonneville makes changes to its products, services and its tariff.

I can count on BPA to help me navigate through their processes so that I can achieve my business need.

I receive accurate and timely information, including operations, contracts, and bills. When I have concerns or questions, BPA will respond and resolve in a timely manner.

I have visibility into the availability of inventory and incentives to participate and partner with BPA.

I have a clear understanding up front of the expectations from BPA including securing Generation Interconnection or Transmission Service Requests.

I understand BPA's approach towards operations, asset management and maintenance through BPA's business processes and metrics for: reliability, cost, risk, compliance, safety, etc.

...I absolutely consider BPA to be a dependable and responsive business partner.

6. Business Model Focus Areas

The Transmission Value Proposition will be delivered through three business model focus areas: **Product Portfolio**, Infrastructure, and Long-Term Viability.

Product Portfolio

Providing Standardized Options • Value-Based Price Profiles • Drawing from Integrated Regional Planning

A central requirement to delivering the envisioned value of the Transmission Business Model is a portfolio of standardized Transmission products and services that address customers’ needs. BPA will offer those products and services at various levels of cost and benefit.

Product Portfolio and the Agency Strategy

Responsiveness enabled by standardization, balancing pricing and value to enable competitive offerings in future markets, and a regional planning result that enables a more modern operations are all important connections with the agency strategy. Being central to the matter of revenue sustainment or growth, providing decisions around policy and product attributes for system operations, accurate valuation of what is offered into the market, or providing both a more holistic treatment of regional planning while attending to the specific needs of customers.

Product Portfolio and the BPA 2018-2023 Strategic Plan		
1) Strengthen financial health	2) Modernize assets and system operations	4) Meet Transmission customer needs efficiently and responsively
1a) Improve cost-management discipline	2a) Administer an industry-leading asset management program	4a) Address load service, congestion and new transmission service requests by using flexible, scalable, cost-effective and efficient solutions
1b) Build financial resiliency	2b) Modernize federal power and transmission system operations and supporting technology	4b) Develop and implement policies, pricing and procedures for regional planning that incentivize grid optimization and efficient regional resource development
1c) Independent financial health assessment		4c) Meet current and future needs of Network Integration Transmission Service customers through clear business practices and streamlined processes
		4d) Offer more standardized products and services by better aligning BPA’s Open Access Transmission Tariff with pro forma and industry best practices

Providing Standardized Options



Transmission Direction

Transmission serves a broad collection of customers with diverse, sometimes competing needs. These needs include differentiation around flexibility, level of service and certainty of schedule. The Transmission Business Model will meet these needs through standardized product options, better aligning BPA's Open Access Transmission Tariff with *pro forma* and industry best practices.

To avoid costly customizations while modernizing our assets and system operations, and provide consistency for our customers, Transmission will offer a revised portfolio of standardized and streamlined products, services and processes. This portfolio will recognize that some customer needs can be met with lower cost, basic services, while other customers have enhanced needs. We will meet customer needs through standardized products and services that are comparable and not unduly discriminatory or preferential through the BPA tariff. BPA's products will be more strictly modeled on FERC's *pro forma* tariff and products. This includes adjusting our current portfolio of products to be consistent with either the *pro forma* tariff or industry best practices.

Transmission will standardize internal processes and methodologies to increase the efficiency of processing queues for Transmission Service Requests and Generation Interconnection Requests. Processes relating to other parts of our tariff will also be standardized with industry standard implementation of *pro forma* tariff provisions where possible.

BPA will work with customers to manage the transition of changes to Transmission's products and services adopted in the new tariff through the Section 212 process.

Required Changes:

- Modernize BPA's commercial operations, including aligning BPA's tariff with FERC *pro forma* and industry standards. Manage the Transmission Business Model through a disciplined approach to prioritize, sequence, and integrate initiatives.
- Articulate a clear value proposition for each product.
- Adopt a predictable and transparent change process that smoothly transitions away from the current portfolio to the future state.

Examples of Success:

- Aligning with *Pro Forma* firm products (e.g., unlimited hourly firm, conditional firm)
- Transmission losses are consistent with industry best practices

Value-Based Price Profiles



Transmission Direction

Value-based price profiles are imperative to the BPA's financial health, its ability to manage costs, and efficient and responsive delivery. Value-based price profiles will facilitate feedback loops, including benchmarking of our products and services in the industry. (See Appendix 2). We will use coordinated planning and price differentiation to meet the key needs of customers: demand growth, renewable portfolio standards and other public policy objectives.

Through rate cases, Transmission will distinctly price products that intersect value and cost at defined levels of service and engagement, delivering across basic and enhanced customer needs. BPA intends to use the full range of product options available in our current tariff, consistent with FERC *pro forma* and industry best practices. We will also appropriately balance and allocate the level of risk with the value and price of the product.

Appropriate cost allocation is foundational to offering a portfolio of products at rates with corresponding value. The effect of creating and offering this portfolio will drive changes to how BPA invests internally.

Required Changes:

- Define value and attributes of each product and update cost allocation approach to ensure products are priced and segmented appropriately.
- Develop a standard product menu, considering metrics for competitiveness and economic value of different parts of the transmission system.

Examples of Success:

- A revised pricing schedule

Drawing from Integrated Regional Planning



Transmission Direction

Transmission will conduct detailed transmission planning through proactive, collaborative, repeatable and documented processes. This will allow us to standardize and support the distinct attributes of our portfolio of products.¹² We will also develop and implement policies and procedures for regional planning that incentivize grid optimization and efficient regional resource development.

We will partner with the region to increase visibility of forecasted loads, resources and customers' needs, and share planning information to facilitate customer load and resource siting decisions. Accordingly, we believe there is merit in the creation of one regional planning organization in the Pacific Northwest to promote an efficient 'one utility' plan of service perspective that will enhance regional planning, identify infrastructure benefits, and inform investments.

Required Changes:

- Develop and implement policies and procedures for regional planning that incentivize grid optimization.
- Enhance regional planning that incorporates innovative approaches within defined bands of reliability.
- Develop innovative plans of service that embrace modern technology and solutions.

Examples of Success:

- Establish a consistent, timely and repeatable queue management process.
- Augment or replace Long-Term Available Transfer Capability (ATC) posting with more accurate system availability information.

¹² i.e., Network, Point-to-Point, Ancillary Services, Telecommunications Products, etc.

The Transmission Value Proposition will be delivered through three business model focus areas: Product Portfolio, **Infrastructure**, and Long-Term Viability.

Infrastructure

Advanced Situational Awareness • Right-Sized Investments in Assets • Value and Risk-Based Asset Management

The Transmission Value Proposition informs strategic investments in our assets.

Transmission will focus on a rigorous approach to management of its assets, which will allow better management of costs and performance, with the objective to administer an industry-leading asset management program.

Infrastructure and the Agency Strategy

The operation of a high performing grid requires the modernization of assets and system operations. The outcomes envisioned in the Infrastructure Focus Area provide the needed tools, processes, standards and policies required for modernization, visualization, and the development and implementation of viable strategic asset management plans.

Infrastructure and the BPA 2018-2023 Strategic Plan		
1) Strengthen financial health	2) Modernize assets and system operations	4) Meet Transmission customer needs efficiently and responsively
1a) Improve cost-management discipline	2a) Administer an industry-leading asset management program	4a) Address load service, congestion and new transmission service requests by using flexible, scalable, cost-effective and efficient solutions
1b) Build financial resiliency	2b) Modernize federal power and transmission system operations and supporting technology	<i>4b) Develop and implement policies, pricing and procedures for regional planning that incentivize grid optimization and efficient regional resource development</i>
<i>1c) Independent financial health assessment</i>		<i>4c) Meet current and future needs of Network Integration Transmission Service customers through clear business practices and streamlined processes</i>
		<i>4d) Offer more standardized products and services by better aligning BPA's Open Access Transmission Tariff with pro forma and industry best practices</i>

Advanced Situational Awareness



Transmission Direction

Transmission will integrate tools and analysis of system capabilities to maximize the reliable and efficient use of the transmission system. This will be accomplished by enhancing tools in three major ways: automation, accuracy and visibility. These tools and processes are also key enablers for the comprehensive grid modernization road map for the federal power and transmission system.

Automation of processes minimizes the potential for human error, and makes more efficient use of resources. BPA will accomplish greater accuracy through incorporation of real-time data and analysis into the calculation of system limitations, thereby releasing excess capacity while maintaining reliability. Enhanced visibility and control of loads, resources and flows (including market flows) will allow more accurate, effective, and reliable management of the transmission system.

Required Changes:

- Incorporate appropriate risk thresholds and improve the accuracy of identified system limitations.
- Create better visibility of system conditions and limitations.
- Implement tools and processes to prevent and mitigate adverse system conditions.
- Adopt an enterprise architecture approach to align related processes and systems.

Examples of Success:

- Automate study processes for operational planning analyses and short-term ATC calculations.
- Develop improved generation and load forecasts.
- Implement advanced applications such as voltage stability analysis.
- Advance synchro phasor technology.
- Develop plans that utilize flow limiting controls on the system.
- Improve dispatcher displays.
- Implement NT redispatch capabilities.
- Automate Remedial Action Schemes (RAS).
- Implement the Coordinated Transmission Agreement with CAISO.
- Aligned planning and operational network models.

Right-Sized Investments in Assets



Transmission Direction

Transmission will base physical and technology asset investment objectives on achieving the Transmission Value Proposition. In order to share and optimize asset investments, Transmission will actively look for utility and private organization partnerships opportunities. Risk, return on investment and scalability will be incorporated in these decisions.

Transmission will continue to be accountable for the efficient deployment of expense and capital as well as the delivery and realization of intended benefits, developing strategic asset management plans for each asset category.

Required Changes:

- Proactively steer and facilitate earlier engagement with customers to integrate new technology and economic development strategies.
- Develop a repeatable, consistent study “follow through” process with a more extensive focus on loads and generation resources and streamlining internal processes to facilitate a timelier response to customers.
- Develop more tools than “build”. More tools than “build” are low-impact upgrades to existing transmission circuits/equipment and Non-Wires alternatives (N-W). N-W include, but are not limited to, energy storage and flow control devices, demand response or other commercial products.

Examples of Success:

- Replace posting of LT ATC with the ability to identify and communicate areas where there is available capacity and the time and cost for interconnections is lower, on average.
- Implement re-bids on capacity.
- Revise the rollover policy.
- Implement long-term South of Allston solution.

Value and Risk-Based Asset Management



Transmission Direction

Transmission will optimize asset lifecycle and maintenance processes to meet both risk and value based objectives, including safety, reliability, availability and economic value for the region. This is achieved by adopting utility best practices and driving operational excellence.

This approach will inform capital investment requirements through

- Understanding our assets' criticality, health and risks
- Establishing risk-based asset performance objectives
- Using leading analytical methods to prioritize maintenance activities and capital investments for safe, reliable asset performance.

Required Changes:

- Define economic value, including the methodologies and specific metrics. This includes the identification of metric owners and corresponding governance structures and resultant policies.
- Improve and grow analytical skills. A key milestone towards creating or aligning with utility best practices is the ability to target, manage and use better data: financial, operational, asset, customer information.
- Define critical parts of the transmission system, integrate these needs into asset management, and define enabling processes.
- Establish organizational and program risk thresholds and tolerances.
- Align models and assumptions.

Examples of Success:

- Maintenance is prioritized considering compliance requirements, predictability of failure, and risk with the overarching goal of maximizing system reliability at a responsible cost.
- Outage needs are coordinated as far in advance as possible and are managed to specific criteria to allow them to proceed with continual assessment and communication of probability/likelihood.
- Align planning and operational network models.

The Transmission Value Proposition will be delivered through three business model focus areas: Product Portfolio, Infrastructure, and **Long-Term Viability**.

Long-Term Viability

Integrated and Efficient Processes • Data-Driven Decision-Making • Innovation and Continuous Improvement

Transmission will commit to a culture of innovation and continuous improvement by enhancing analytics and processes to sustain the Transmission Value Proposition. People are the foundation of Transmission’s ability to deliver on the Transmission Value Proposition, and it is vital to our long-term viability that we embed enhanced critical thinking into the skillset across the organization.

Transmission recognizes that resources and staff capacity are not limitless. It is essential that we prioritize to enable us to achieving the Transmission Business Model, focusing our current and future work around our strategic direction.

Long-Term Viability and the Agency Strategy

Long-Term Viability is an early and necessary enabler for change. Both the Transmission Business Model as well as the agency strategy will require investments in process management, the availability and function of data to drive decisions, and an approach towards continuous improvement for the benefits to be sustained, financially as well as operationally.

These will be featured in Operating Plans (and embedded program plans) providing an integrated view of the business, workforce and financial performance of each major cross-agency function.

Long-Term Viability and the BPA 2018-2023 Strategic Plan		
1) Strengthen financial health	2) Modernize assets and system operations	4) Meet Transmission customer needs efficiently and responsibly
1a) Improve cost-management discipline	2a) Administer an industry-leading asset management program	4a) Address load service, congestion and new transmission service requests by using flexible, scalable, cost-effective and efficient solutions
1b) Build financial resiliency	2b) Modernize federal power and transmission system operations and supporting technology	4b) Develop and implement policies, pricing and procedures for regional planning that incentivize grid optimization and efficient regional resource development
1c) Independent financial health assessment		4c) Meet current and future needs of Network Integration Transmission Service customers through clear business practices and streamlined processes
		4d) Offer more standardized products and services by better aligning BPA’s Open Access Transmission Tariff with pro forma and industry best practices

Integrated and Efficient Processes



Transmission Direction

Transmission will integrate and align key activities across the organization and BPA through defined and streamlined processes and governance that enable efficiency, responsiveness and certainty of schedule.

Transmission will mature and integrate our business process management across all primary activities in the Transmission value chain. This way, Transmission ensures clear and transparent requirements and processes for transmission planning, federal and nonfederal power resource designation, queuing and network operating rules.

Required Changes:

- Establish policy, organizational and manager accountabilities, process mapping, benchmarking of industry best-practices and performance metrics.
- Establish a Business Process Management Council that will define process management standards and a maturity roadmap. The focus will be on clear and consistent processes and decision-making, especially cross-organizational.
- Evaluate the touchpoints into the customer relationships. Specifically target and manage to the customer experiences described earlier.

Examples of Success:

- Develop a framework for process integration, accommodating customer inputs as appropriate, as well as monitoring and measurement controls.

Data-Driven Decision-Making



Transmission Direction

Business decisions will be driven by strong analytics, defined metrics and risk assessments/mitigation measures. Modernizing system operations both requires and enables the availability of data to support decisions around investments, performance, elimination of lower priority work, and improving Transmission's ability to design and implement projects on time and on budget.

These metrics will measure progress in achieving the performance in operational efficiency, customer satisfaction, financial health and competitiveness of the Transmission Business Model.

Required Changes:

- Formalize and mature business process management capabilities across the organization, as it is fundamental to consistently providing accurate and actionable data to support timely and effective decisions.
- Own, quantify and manage customer and organizational benefits, and their resultant metrics must have targets and goals.
- Establish data governance and stewardship.

Examples of Success:

- Establish and operationalize a management framework to routinely review and take action on metrics, thresholds and results that measure progress and risk against tolerances. Adopt a disciplined approach (i.e. single source of truth) to the use of data with clear and consistent decision-making processes.

Innovation and Continuous Improvement



Transmission Direction

Transmission will promote a culture of leadership in innovation and continuous improvement, emphasizing both strategic agility and focused execution to ensure long-term competitiveness. As a team, Transmission will demonstrate the courage to change, commit to always give our best and have the grit and persistence to capture success. Transmission will encourage innovation and continuous improvement skillsets within every team member.

It will also take aggressive steps to manage the rising costs of operating the transmission system, starting by establishing a cost-management goal to keep the sum of program costs, by business line, at or below the rate of inflation through 2028.

Transmission will continuously focus on and increase value to the region by fusing innovation and continuous improvement.

Required Changes:

- Develop and implement a transmission grid continuous-improvement program so that BPA has a central way to analyze events and to set milestones to mitigate the outcome of the event with root-cause analysis as necessary.
- Focus on safety and emergency preparedness for investments in both innovation and continuous improvement. Additionally, there are many day to day improvements that can be made across the agency, and creating an improvement culture that works both top down as well as bottom-up will be key.
- Establish and operationalize a framework to monitor and analyze the changing industry and competitiveness factors that could drive future Transmission strategic direction. (See Appendix 2)

Examples of Success:

- Create a process for event-analysis, lessons learned, and corrective-action plans across Transmission with the goal that whenever there is a significant issue on the system.
- Revamp process for clearance and permitting for energized access.
- Operational redundancy of proficiencies between control centers.

7. Credit and Acknowledgment

A special thank you to all those who contributed to the concept and development of the Transmission Business Model since its journey started in the Summer of 2016. While a work that involved many hands, it owes much of its existence to the commitment, vision, and leadership of the Transmission Lead Team:

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8. Appendix A – Detailed Context for Transmission Services

BPA has a very rich history that is deeply rooted in statute.

In 1937, the Bonneville Project Act created BPA and directed it to market federally produced hydroelectric power to customers, giving preference and priority in power sales to public bodies and cooperatives. The Act authorized BPA to construct, own and operate transmission facilities to deliver federal power at cost. BPA’s marketing and delivery of federal power was bundled, with cost-based rates recovering both the costs of the federal power and the federal transmission system used to deliver the power to customers. For three decades, BPA and its customers benefited from hydro and transmission systems that had surplus energy and capacity.

In 1964, as a condition to building inter-regional interties, Congress passed the Pacific Northwest Consumer Power Preference Act. The Preference Act guaranteed consumers in the Pacific Northwest first call on electric energy and capacity. Section 6 of the Act provides that capacity in Federal transmission lines “which is not required for the transmission of Federal energy” shall be made available as a carrier for transmission of other electric energy between the Pacific Northwest, Canada or any other area outside the Pacific Northwest. Section 6 also specifies that no contract for the transmission of non-Federal energy on a firm basis shall be affected by any increase, subsequent to the execution of such contract, in the requirements for transmission of Federal energy or other electric energy.

By the late 1960s, BPA anticipated limits to the Federal Columbia River Power System and issued Notices of Insufficiency to investor-owned utilities in 1967, then to preference customers in 1977. To respond to the need for additional power (energy and capacity), the region’s utilities began to plan to add new generation, mainly nuclear plants. Transmission investment was also needed to serve the needs of the region.

In 1974, Congress passed the Federal Columbia River Transmission System Act that required BPA to be self-financing and vested the administrator with broad authority to construct transmission and integrate and transmit both federal and non-federal power. The impetus for the Act was to support the development of the Hydro Thermal Power Program whereby regional utilities would invest in the development and construction of non-federal thermal generation and BPA would construct the transmission system to interconnect such resources. By being free of the congressional appropriation process, the expectation was BPA would be able to construct transmission on a more efficient and expedient basis to integrate and transmit electric power from existing or additional Federal or non-Federal generating units, meet the

service needs of its customers, provide interregional facilities, or maintain the electrical stability and electrical reliability of the Federal system, among other things. The Transmission System Act also required BPA to make surplus transmission capacity (capacity not needed to transmit electric power generated or acquired by the United States) available to all utilities on a fair and non-discriminatory basis.

In 1980, Congress passed the Pacific Northwest Electric Power Planning and Conservation Act. Under that Act, BPA was authorized to acquire resources on a long-term basis to meet the net load requirements of regional utilities (if requested), mitigate impacts to fish and wildlife, implement the Residential Exchange Program, and acquire energy conservation as a resource to meet load, among other things. BPA was also directed to offer long-term power sales contracts to its regional customers. Congress also reaffirmed the preference and priority to public bodies and cooperatives at all times in the marketing or disposition of federal power.

In the 1990s, the energy regulatory landscape in the nation began to change dramatically. In 1992, Congress passed the Energy Policy Act to create open access transmission and prevent undue discrimination. This Act gave the Federal Energy Regulatory Commission (FERC) the authority to order non-public transmitting utilities like BPA to provide transmission or interconnection service under certain limited circumstances.

In 1996, FERC restructured the electric industry by issuing Order Nos. 888 and 889. Under Order No. 888, FERC required public utilities (i.e., FERC jurisdictional utilities) to provide open access transmission service on a comparable basis to the transmission service they provide themselves. FERC did this by creating the *pro forma* Open Access Transmission Tariff as the standard non-discriminatory, terms and conditions for transmission service. FERC required that every public utility that owns, controls or operates facilities used for transmitting electric energy in interstate commerce to adopt and file the *pro forma* tariff with FERC.

Under the *pro forma* Tariff, FERC required public utilities:

1. To award transmission capacity on a first-come, first-served basis; and
2. To offer two types of transmission service: (1) Point-to-point, or “PTP,” which is transmission sold from point A to point B; and (2) Network, or “NT,” service, which is designed to be comparable to a transmission provider’s use of its own transmission network to serve its native load and requires the transmission provider to include the NT customer’s resource and load forecasts (projected over a minimum ten-year period) in its long-term planning horizon.

Under Order No. 889, FERC required public utilities to adopt Standards of Conduct to separate their transmission operations and reliability functions from their wholesale marketing/merchant functions and to establish an Open Access Same-time Information System known as “OASIS” to act as a portal for public utilities to post their tariffs for customers to find.

BPA is not a public utility that is subject to FERC’s jurisdiction under sections 205 and 206 of the Federal Power Act. Accordingly, BPA is not legally required to comply with FERC’s Order No. 888 or 889. However, in Order No. 888, FERC created an incentive for non-public utilities like BPA to voluntarily adopt open access and the *pro forma* tariff. FERC stated that if non-public utilities offer open access transmission service, public utilities must offer them access in return. This concept is known as reciprocity. Although not required by FERC, BPA decided to adopt an Open Access Transmission Tariff with certain modifications in 1996. BPA also established an OASIS, adopted standards of conduct and “opened” its system general terms and conditions with others in the industry. These decisions were based on several directives or assumptions, including:

- BPA would separate its transmission function from its power function and become the Regional Transmission Organization or Independent System Operator in the Pacific Northwest;
- A 1995 Department of Energy memo supporting FERC’s effort for national open access that directed power marketing administrations, including BPA, to support it;
- BPA could meet its statutory obligations under the open access transmission provisions; and
- Additional assumptions stated in BPA’s 1995 business plan.
- Power Services would compete on a “level playing field” with other customers for transmission service.

BPA is committed to offering transmission service under its tariff based on FERC’s *pro forma* tariff. BPA will consider changes to its tariff only if the changes are prudent based on the needs of our stakeholders, the reliable and efficient operation of the FCRTS, or BPA’s statutory responsibilities.

In 1996, BPA functionally separated into distinct power and transmission business lines and physically separated both businesses. However, this split was driven by assumptions about the industry’s future that did not come to fruition: The region did not establish a Regional Transmission Organization or Independent System Operator. The split thus resulted in unnecessary redundancies in administrative systems and processes that did not involve Standards of Conduct restricted transmission information and merchant function employees.

In response to sentiments aimed at anti-manipulation of gas prices, heightened fears about grid reliability, and a desire for compliance with FERC regulations, Congress passed the Energy Policy Act of 2005. This Act expanded FERC jurisdiction under the Federal Power Act with respect to mandatory reliability standards and the provision of open access transmission service by unregulated transmitting utilities such as BPA, among other things. Specifically, it added

section 215 regarding mandatory transmission reliability standards that apply to BPA and other utilities and section 211A, which gave FERC the authority to require, by rule or order, an unregulated transmitting utilities such as BPA to provide transmission service at rates comparable to those the utility charges itself, and on terms and conditions (not relating to rates) that are comparable to those it offers itself and that are not unduly discriminatory or preferential.

In 2007, FERC revisited its open access transmission policies and issued Order No. 890 to ensure that transmission services under the *pro forma* tariff are provided on a basis that is just, reasonable, and not unduly discriminatory. Like FERC's prior orders, BPA was not required to adopt FERC's *pro forma* revisions to its tariff. Nevertheless, BPA attempted to do so and made a submission to FERC requesting approval under the safe harbor process that included alternative proposals in certain areas, but adopting most FERC Order No. 890 requirements. FERC did not approve and, after several more attempts to obtain safe harbor status, in 2013, FERC approved BPA's tariff in part, but declined to grant BPA safe harbor status because of BPA's alternative proposals.

In 2014, BPA focused on critical areas where there were perceived tensions or conflicts between BPA's obligations to its regional preference customers and its obligations under its open access transmission tariff that required greater clarity, resolution, and direction. The dialogue centered on BPA's ability to fulfill its mission and meet its multiple statutory obligations as the industry evolves and external forces continue to affect BPA's traditional business model (2015 Strategic Intent Paper).¹³ BPA affirmed that its preference customers are its core constituency. BPA concluded that it would continue to offer non-discriminatory transmission service through the BPA Tariff. BPA also concluded that it will aspire to meet the spirit and letter of the FERC's *pro forma* tariff by implementing a comprehensive BPA Tariff compliance program.

In 2016, BPA opened a stakeholder dialogue with respect to the future of its Open Access Transmission Tariff and indicated its intent to no longer seek reciprocity safe harbor status from FERC. BPA communicated with stakeholders that it believed the safe harbor process is no longer a tenable approach for making changes to the BPA Tariff and that BPA would instead make changes through a regional public process. In January 2018, BPA informed the region that the public process it would employ for tariff changes would follow the procedural requirements of Section 212(1)(2)(A) of the Federal Power Act (Section 212). In addition, BPA is committed to offering transmission service under its tariff based on FERC's *pro forma* tariff where possible, in keeping with the direction of the 2018-2021 Strategic Plan, and set forth criteria under which BPA would consider differences from the *pro forma* tariff. This *pro forma* strategic guidance stated that BPA would consider differences from the FERC *pro forma* tariff if the differences are based on at least one of the following:

¹³ Clarifying BPA Obligations Strategic Intent Paper – 1/29/15. This paper was the result of 6-9 months of meetings followed up on with this writing.

- BPA’s statutory and legal obligations, authorities, or responsibilities
- The reliable and efficient operation of the federal system
- Preventing significant harm or providing significant benefit to BPA’s mission or the region
- The FERC *pro forma* tariff is lagging behind industry best practice, including instances of BPA setting the industry best practice

In 2017, BPA affirmed the policy direction the Strategic Intent Paper and will further elaborate on that direction in this Transmission Business Model document.

9. Appendix B – Competitiveness Framework

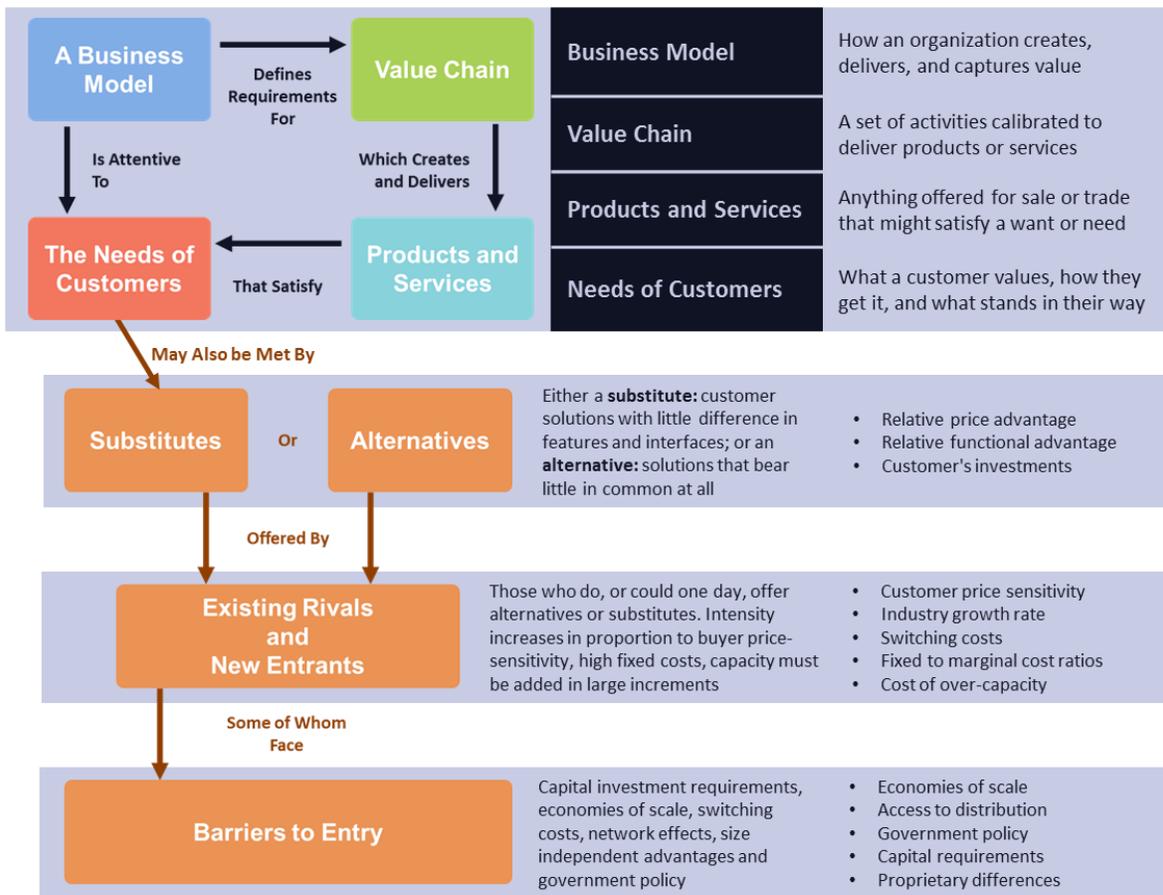
Competitive Analysis: Rivalry

Competitive Context

As the Transmission of Tomorrow matures, an understanding of the competitive situation will be required in the design of its business model. Rather than a one-off project, competitive analysis is an enduring capability of the enterprise, to be operated routinely, informing value propositions, products, and financial performance

Industry Rivalry

Value Propositions and products appeal to customer needs. To remain competitive, know who else may seek to satisfy these needs, and how



Competitive Analysis: Industry Structure

Industry Structure

An understanding of industry structure will make clear which participants are capturing the most economic benefit, and who exerts the most power. The analysis begins with an understanding of *your* customers and suppliers. It is then important to continue this analysis to the suppliers of your suppliers; the customers of your customers, so on. Ultimately determining where the margins are most favorable and sources of power most concentrated

Value Chain: Enterprise
A set of activities calibrated to deliver products or services

Value Chain: Industry
The entire process of transforming raw materials to final consumption and disposal by the end consumer

A value chain for the enterprise is composed of three key elements: Primary Activities, Support Activities and the Target Value, usually expressed as the remaining margin after costs are netted from revenue

- **Primary Activities:** directly contribute to the creation, sale and support of a product
- **Support Activities:** provide necessary support to the primary activities, but do not directly relate to products

Supplier

A supplier is best understood as a source of costs, external to the enterprise. In this analysis you are not as interested in *all* of your inputs, but primarily in your *purchased* inputs

- **Bargaining Power:** will regularly increase prices and insist on more favorable terms
- **Forward Integration:** suppliers may develop the capability to serve your customers directly

Customer

Customers, also called buyers, are those entities that directly provide revenue to you for your products and services. They can be both intermediary or retail customers

- **Price Sensitivity:** over time, customers will demand more value at current/lower prices
- **Backward Integration:** technology and financial imperatives enable/force customers to *insource* or replace you