

Pre-Qualification Package for:  
**Designated Entity Status**

Submitted by  
**Mid-Atlantic Offshore Development, LLC**

Submitted to:  
**PJM Interconnection, LLC**  
**Office of Interconnection**

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Mid-Atlantic Offshore Development, LLC  
15445 Innovation Drive  
San Diego, CA 92128

Matthew Virant, Director, Business Development Transmission  
Phone: 858.521.3552  
Email: [Matthew.Virant@edf-re.com](mailto:Matthew.Virant@edf-re.com)  
EDF Renewables North America

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## Introduction

Mid-Atlantic Offshore Development, LLC (MAOD) submits this application to the PJM Interconnection, LLC Office of Interconnection to fulfill the pre-qualification criteria to achieve Designated Entity status as outlined in Section 2.2 of Manual 14F. MAOD is a 50/50 joint venture between EDF Renewables North America (EDFR) and Shell New Energies US, LLC (Shell New Energies). EDFR and Shell New Energies have a separate 50/50 joint venture, Atlantic Shores Offshore Wind, LLC, which is developing a BOEM lease area with the potential for upwards of 3,000 MW of offshore wind. MAOD, which has a separate and distinct management team from Atlantic Shores Offshore Wind, will ensure that it satisfies any FERC requirements for functional unbundling of transmission facilities and operations relative to merchant generation.

EDFR's parent is Électricité de France S.A., one of the world's largest electricity generators. Shell New Energies is an affiliate of Shell Oil Company US, which is a subsidiary of Royal Dutch Shell plc (Shell), the fifth largest company in the world when measured by revenues, which operates technically complex energy facilities in harsh environments where reliability is critical.

This pre-qualification package reviews the qualifications, experience, technical and financial capabilities of EDFR and Shell New Energies in partnership to deliver transmission projects that operate reliably in a timely and cost-effective manner.

MAOD asks PJM to process this application promptly. Good cause exists for PJM to do so outside the annual thirty-day qualification window.<sup>1</sup> Specifically, MAOD plans to submit one or more project proposals before the September 17, 2021 close of the 2021 New Jersey Offshore Wind State Agreement Approach Transmission Proposal Window. MAOD aims to obtain pre-qualification status before its proposals to make itself eligible for the NJ BPU to select it as a Designated Entity.

### **1. Name and address of the entity, including a point of contact**

The name of the entity that is seeking Designated Entity status is Mid-Atlantic Offshore Development, LLC (MAOD). MAOD's address is 15445 Innovation Drive, San Diego, CA 92128. The MAOD contact for this pre-qualification package is: Matthew Virant, Director, Business Development Transmission, EDF Renewables North America, email: Matthew.Virant@edf-re.com, and phone number: 1.858.521.3552.

### **2. Technical and engineering qualifications of the entity or its affiliate, partner or parent company**

EDFR and Shell New Energies offer extensive technical and engineering capabilities. EDFR is a market-leading, independent power producer and service provider: delivering grid-scale power, wind (onshore and offshore), solar photovoltaic and storage projects; distributed solutions: solar, solar+storage, electrical vehicle charging and energy management asset optimization; and technical, operational and commercial skills to maximize performance of generating projects. EDFR's Grid-Scale Power team

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<sup>1</sup> Amended and Restated Operating Agreement of PJM Interconnection, LLC, Schedule 6, § 1.5.8(a)(4); PJM Manual 14F (Competitive Planning Process), § 2.1.

provides origination, development, transaction and construction services for large-scale wind (offshore and onshore), solar power generation, and storage projects across North America along with associated transmission facilities. EDFR's team of leaders can solve energy challenges no matter the size or complexity. EDFR's North American portfolio consists of 20 gigawatts (GW) of developed projects and 13 GW of operating assets under service contracts.

EDFR is a subsidiary of EDF Renouvelables, the dedicated renewable energy affiliate of the EDF Group. EDF Renouvelables had over 3,800 employees at year end 2020, with over 1,600 of these (more than 40%) being managers and engineers. The depth of EDF's technical and engineering capability is demonstrated by its R&D organization, which encompasses electrical engineering and structural mechanics, which reside within its engineering & generation R&D program; its networks (transmission and distribution) program and various others programs that are core to its service delivery capabilities. EDF's R&D organization is outlined below in Figure 1. Figure 2 discloses where EDFR, CIST and the R&D organization reside within the broader EDF corporate structure.

Shell New Energies operates over 4 GW of power generation and supplies power over thousands of miles to production and processing facilities. With 87,000 employees and integrated energy facilities World-wide, Shell offers world-class technical and engineering capabilities.

In addition to these "in-house" capabilities that reside within the EDF and Shell organizations, where necessary or cost-effective, MAOD contracts, and as Designated Entity would acquire or contract, for any of the capabilities or competencies required for specific project tasks. The EDF and Shell organizations have long-standing relationships with equipment vendors, engineering and EPC firms.

Figure 1: EDF's R&D Organizational Chart

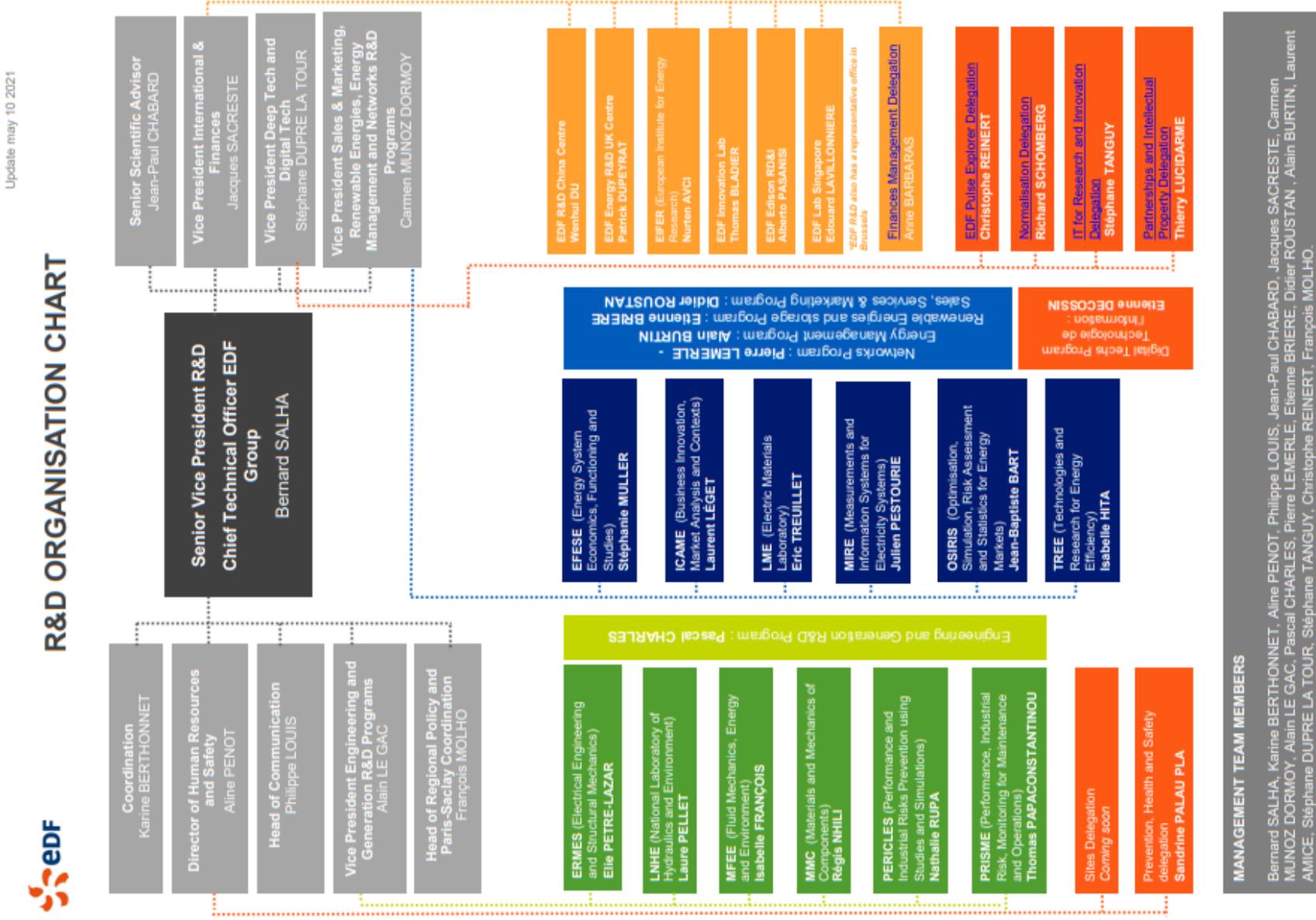


Figure 2: EDF's Broader Corporate Structure

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**3. Demonstrated experience of the entity or its affiliate, partner or parent company to develop, construct, maintain and operate transmission facilities, including a list or other evidence of transmission facilities previously developed regarding construction, maintenance or operation of transmission facilities both inside and outside the PJM region.**

Both the joint venture partners in MAOD have relevant experience developing, constructing, maintaining and operating transmission facilities. This relevant experience is identified below for each entity separately.

**EDFR**

EDF Renewables North America (EDFR)'s operations are focused on North America, its parent EDF Energies Nouvelles (EDF EN) develops, builds and operates clean energy power plants in 22 countries. EDFR is a leading independent power producer with 20 GW of renewable projects developed and in commercial operation in North America. A list of major transmission facilities developed, owned and operated by EDFR for these projects is presented in Table 1 below.<sup>2</sup> For these projects EDFR is generally responsible for project development, system design, project construction and operations and maintenance of the facilities. This includes the development, construction and operations and maintenance of the transmission facilities to interconnect these projects to the transmission grid.

In addition, an affiliate of EDFR is responsible for developing, constructing, maintaining and operating subsea transmission facilities to connect various offshore wind projects to the onshore transmission grid. Specifically, an affiliate of EDFR built the offshore transmission cables and substations that connected the Teesside Offshore Wind Project (62 MW) and the Blythe Offshore Wind Project (42 MW), both in the United Kingdom. The Teesside Offshore Wind Project connects to the onshore grid at 33kV using the same voltage as the inter array electrical connections. The Blythe Offshore Wind Project connects to the onshore grid at 66KV, the same voltage as the inter array cables.

More broadly, EDF's Power System & Transmission Engineering Centre (CIST or Centre d'Ingénierie Système Transport) would be available as required to provide comprehensive technical support during project design, development, construction and operation. As its name implies, CIST is EDF's power system and transmission networks expert organization. [REDACTED]

[REDACTED] CIST was engaged by Egypt to supervise construction of new transmission facilities designed to meet load growth and integrate additional renewable generation and to increase its interconnections with other countries. The project involved the design of numerous transmission projects and supervising the construction of 21 transmission facilities (both substations and transmission lines) over five years.

In addition, EDFR's Implementation Group would be able to bring the project from the development phase to the operation phase relying on an EDFR Program Engineering and Construction Manager. This individual would be supported by a vast team of subject matter experts in various disciplines, including

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<sup>2</sup> EDFR periodically sells assets and interests in projects as part of its investment management strategy.

engineering, construction, procurement, environmental, interconnection, land acquisition, legal and the development team. EDFR's Asset Optimization group would be able to operate any project for which MAOD is the Designated Entity. EDFR is one of the largest providers of third-party Operations & Maintenance (O&M) services in North America. Its Asset Optimization team offers a range of expertise, from asset management to spare parts procurement. The available range of services begins prior to commissioning and goes through decommissioning including balance-of-plant management, equipment service both during and after the warranty period, major component repair and replacement, engineering support, and remote monitoring. If EDFR were the operator of any transmission facilities for which MAOD were the Designated Entity, the project would be monitored, supervised and managed with the support of our 24-7 Operations Control Center (discussed further below). Best practices and other operating requirements such as NERC standards would be duly implemented and followed. EDFR's experienced team of over 400 full-time technicians, managers, and support staff, means that it is fully equipped to manage the balance-of-plant and day-to-day operations of any project for which MAOD is the Designated Entity.

## Shell

Shell New Energies and its affiliates have developed a large number of generation facilities, with these generation facilities typically requiring the development of associated transmission facilities. For example, Shell developed, constructed and operates the [REDACTED] MW Carmon Creek Cogeneration facility in Alberta, Canada. For Carmon Creek, Shell constructed a [REDACTED] distribution network and [REDACTED] substation. Transmission facilities included one [REDACTED] substation; [REDACTED] MVA generator step-up transformers; [REDACTED] step-down transformers and [REDACTED] circuit breakers.

In addition, Shell New Energies' affiliates operate thousands of miles of distribution systems to supply power to production and processing systems. In some instances, these distribution networks are supported by Shell-owned and operated transmission facilities. For example, in Oman, the distribution system was developed in steps, from isolated power generation facilities, through to interconnected fields using [REDACTED] overhead lines. Currently, this network includes a fully integrated [REDACTED] power system including a connection to the country grid. Reflecting its integrated approach to power supply and transmission planning as well as understanding of best practices in Oman, Shell elected to use enhanced polymer coatings on overhead insulators to reduce trips and increase production availability.

In addition, Shell offers extensive experience operating in the offshore. Shell is part of the Blauwwind Consortium that operates the Borssele 3 and 4 wind farm (731.5 MW) approximately 22 km off the Dutch coast. Shell has over 40 years' experience operating in offshore and has helped develop many of the deep-water technologies and processes that energy companies use today. This experience provides Shell with a deep understanding of the complexities of offshore development, construction and operations and an understanding of the interactions with other stakeholders – commercial and recreational fishermen, shipping, as well as environmental concerns related to sensitive marine life.

Table 1: EDFR’s Major North American Transmission Facilities

Project	Location	Nature	Length	Project Size (MW)	Voltage	Status	ISO	Commissioning Year	Comments
Coyote Wind	Scurry County, TX, US	Gen-tie between the project substation and project switchyard near POI	██████	██████	██████	In Operation	ERCOT	████	
Copenhagen Wind project	Jefferson County, NY, US	Gen-tie	██████	██████	██████	In Operation	NYISO	████	
Tyler Bluff Wind Project	Cooke County, TX, US	Gen-tie	██████	██████	██████	In Operation	ERCOT	████	
Kelly Creek Wind	Ford & Kankakee County, IL, US	Gen-tie	████ ██████	██████	██████	In Operation	PJM	████	████████████████ ████████████████ ████████████████ ████████████████
Valentine Solar	Kern County, CA, US	Gen-tie (Connecting to existing Catalina gen-tie)	██████	██████	██████	In Operation	CAISO	████	
Desert Harvest Solar	Riverside County, CA, US	Gen-tie	██████	██████	██████	In Operation	CAISO	████	████████████████ ████████████████ ████████████████ ████████████████

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Maverick Solar	Riverside County CA, US	Gen-tie	[REDACTED]	[REDACTED]	[REDACTED]	In Operation	CAISO	[REDACTED]	[REDACTED]
Catalina Solar	Riverside County CA, US	Gen-Tie	[REDACTED]	[REDACTED]	[REDACTED]	In Operation	CAISO	[REDACTED]	[REDACTED]
Wapsipinicon/ Grand Meadow	Mower County, MN	Gen-Tie	[REDACTED]	[REDACTED]	[REDACTED]	In Operation	MISO	[REDACTED]	[REDACTED]
Spinning Spur 1	Potter County, TX	Gen-Tie	[REDACTED]	[REDACTED]	[REDACTED]	In Operation	SPP	[REDACTED]	[REDACTED]
Spinning Spur 2	Oldham and Potter Counties, TX	Gen-Tie	[REDACTED]	[REDACTED]	[REDACTED]	In Operation	ERCOT	[REDACTED]	[REDACTED]
Spinning Spur 3	Oldham and Potter Counties, TX	Gen-Tie	[REDACTED]	[REDACTED]	[REDACTED]	In Operation	ERCOT	[REDACTED]	[REDACTED]
Longhorn	Floyd County, TX	Gen-Tie	[REDACTED]	[REDACTED]	[REDACTED]	In Operation	ERCOT	[REDACTED]	[REDACTED]

Roosevelt and Milo	Roosevelt County, NM	Gen-Tie	[REDACTED] [REDACTED] [REDACTED] [REDACTED]	[REDACTED]	[REDACTED]	In Operation	SPP	[REDACTED]	[REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED]
Great Western	Woodward County, OK	Gen-Tie	[REDACTED] [REDACTED] [REDACTED] [REDACTED]	[REDACTED]	[REDACTED]	In Operation	SPP	[REDACTED]	[REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED]
Slate Creek	Sumner and Cowley Counties, KS	Gen-Tie	[REDACTED]	[REDACTED]	[REDACTED]	In Operation	SPP	[REDACTED]	
Oso Grande	Eddy County, NM	Gen-Tie	[REDACTED]	[REDACTED]	[REDACTED]	In Operation	WECC (El Paso Electric)	[REDACTED]	
Rock Falls	Grant County, KS	Gen-Tie	[REDACTED]	[REDACTED]	[REDACTED]	In Operation	SPP	[REDACTED]	
Bobcat Bluff	Archer County, TX	Gen-Tie	[REDACTED]	[REDACTED]	[REDACTED]	In Operation	ERCOT	[REDACTED] [REDACTED]	[REDACTED] [REDACTED]

#### **4. Previous record of the entity or its affiliate, partner or parent company to adhere to construction, maintenance and operating standards**

Both of MAOD's joint venture partners have relevant experience adhering to construction, maintenance and operating standards. Each company has extensive capabilities to adhere to standardized construction, maintenance and operating standards. This is evident given the size and scope of both the EDFR and Shell organizations and the numerous construction projects that each organization manages simultaneously as well as maintaining and operating extensive fleets of electric generating facilities and associated transmission facilities and other complex energy assets. This experience adhering to construction, maintenance and operating standards will be brought to bear to adhere to the obligations that MOAD will accept if it becomes a Designated Entity and is designated to construct, own, operate, maintain, and finance a competitive planning transmission project.

Both EDFR and Shell have developed and rely on numerous manuals that detail the standards used to construct, maintain and operate their facilities so that they achieve high levels of reliability and operating performance. In particular, EDFR has developed a series of technical standards and specifications for the design, construction, maintenance and operation of renewable energy projects and associated transmission lines.

Shell Renewable Asset Management International (SRAMI) is responsible for managing a portfolio of renewable energy assets. SRAMI plans, conducts, and facilitates various types of assurance activities to ensure the risks of the specific business or asset have been identified and are being managed adequately. SRAMI manages these assets according to Shell's Asset Management System (AMS) and Shell's Control Framework. SRAMI processes have been developed through 15+ years of renewable power asset management and represent a cohesive management system.

#### **5. Capability of the entity or its affiliate, partner or parent company to adhere to standardized construction, maintenance and operating practices**

Given the size and scope of both the EDFR and Shell organizations and the numerous construction projects that each organization is managing simultaneously as well as maintaining and operating extensive fleets of electric generating facilities and associated transmission facilities as well as other complex energy assets, each company has extensive capabilities to adhere to standardized construction, maintenance and operating practices. EDFR and Shell ensure that their energy facilities are constructed, maintained, and operated to adhere to all applicable codes, standards, regulations, and laws. For transmission facilities this includes the National Electrical Safety Code, IEEE and NERC standards as well as any requirements of the relevant RTO or interconnecting utility.

Both EDFR and Shell have developed and rely on numerous manuals that detail the construction, maintenance and operating practices used to ensure that their facilities achieve high levels of reliability and operating performance. In particular, EDFR has developed a series of technical standards and specifications for the design, construction, maintenance and operation of renewable energy projects and associated transmission lines.

Shell utilizes a Local Management System (LMS) to implement this control framework. The LMS includes a set of mandatory standards and manuals, respectively describing the “What” and the “How” and also includes recommended practices. Core to the LMS is Shell’s process for managing threats and opportunities (MOT), which establishes the requirements by which the SRAMI identifies, prioritizes, and takes action to mitigate threats and realize opportunities to meet the Strategic Asset Management Plan and business plan delivery. Another key process is Shell’s hazards and effects management process (HEMP), the objective of which is to establish a process to identify health, safety, security, environment (HSSE) hazards and to reduce the risks to as low as reasonably practicable (ALARP). A hazards and effects register for each asset type is one of the primary tools used to implement the HEMP. The HSSE control framework relies on the following processes: environmental management, incident investigation & learning, and performance monitoring & reporting.

Safety is our top priority for both EDFR and Shell and crucial to the success of any site they operate. Safety is a 24/7/365 commitment and is at the forefront of everything both companies do.

**6. Financial statements of the entity or its affiliate, partner or parent company for the most recent fiscal quarter, as well as the most recent three fiscal years, or the period of the entity’s existence, if shorter, or such other evidence demonstrating an entity’s or its affiliates, partner’s or parent company’s current and expected financial capability acceptable to PJM**

Financial statements for the most recent three fiscal years for EDF Renouvelables S.A., the parent of EDF Renewables North America, are attached as Appendix A.<sup>3</sup> EDF Renouvelables does not issue quarterly financial statements. Financial statements for the most recent three fiscal years and the most recent fiscal quarter for Shell New Energies, are attached as Appendix B.<sup>4</sup> More details on the respective corporate structures of these two companies are provided below.

EDF-RE Offshore Development, LLC has a 50 percent interest in Mid-Atlantic Offshore Development, LLC. EDF-RE Offshore Development, LLC is wholly owned by EDF Renewables Development, Inc., which is a wholly-owned subsidiary of EDFR. EDFR is a subsidiary of EDF Renouvelables S.A. EDF Renouvelables is a subsidiary of EDF Energies Nouvelles S.A. (EDF EN), which in turn is a wholly owned subsidiary of the EDF Group. Électricité de France (EDF) is one of the largest electric utilities in the world.

Shell New Energies US LLC is a 100% owned subsidiary of Shell Oil Company. Shell Oil Company (SOC) has net assets of USD 45.8bln and is rated A+ by Standard and Poor's and Aa3 by Moody's. SOC subsidiaries are funded via an internal annual funding process for 100% owned subsidiaries, of which

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<sup>3</sup> EDF Renewables North America’s financial results are consolidated in the financial statements for EDF Renouvelables and funding for MAOD investments would likely be an affiliate of EDF Renewables North America such as EDF Renouvelables. Therefore, MAOD has elected to present the financial statements for EDF Renouvelables. EDF Renouvelables financial statements are confidential.

<sup>4</sup> The Shell New Energies US financial statements are confidential.

SNEUS is one of them. SNEUS's capital investments have been included in the 2021 annual funding proposal and will be provided via an equity injection from SOC.

The Figure 3 details the ownership and relationships of the business entities from the ultimate parent company Royal Dutch Shell to Shell New Energies US:

Figure 3: Shell Companies Ownership Structure



Links to Royal Dutch Shell's annual report and credit ratings are provided below.

Annual report:

<https://www.shell.com/investors/financial-reporting/annual-publications.html#iframe=L3JlcG9ydC1ob21lLzlwMTgy>

Credit ratings:

<https://www.shell.com/investors/financial-reporting/debt-information/bonds-and-credit-ratings.html#credit-ratings>

## **7. Commitment by the entity to execute the Consolidated Transmission Owners Agreement, if the entity becomes a Designated Entity**

MAOD commits to execute the Consolidated Transmission Owners Agreement if it becomes a Designated Entity.

## **8. Evidence demonstrating the ability of the entity or its affiliate, partner or parent company to address and timely remedy failure of facilities**

Both EDFR and Shell have operations control centers that are used to monitor the operations of their respective energy facilities. The respective capabilities of each are outlined below.

### **EDFR**

EDFR has an Operations Control Center (OCC) in San Diego, California at its Corporate Offices that provides 24/7/365 remote monitoring, including facility monitoring, fault notification and remote resets. It can be used to dispatch technicians and personnel to the site, and allows for voltage management and performance monitoring. This OCC could be used to monitor and operate, subject to direction by PJM, any transmission facilities within PJM for which MAOD was the Designated Entity.<sup>5</sup> EDFR's OCC combines its SCADA and O&M auxiliary services into a technical services hub with an integrated front-end monitoring system to improve response times and more effectively track key performance indicators. The OCC provides daily and monthly reports that provide a record of key operating parameters and significant operational events, trends, and anomalies. This data is summarized to assist with the identification of performance shortfalls and the planning of maintenance activities. The OCC is a medium-impact facility listed as Generation Operator in the North American Electric Reliability Corporation (NERC) Compliance Registry with Western Electricity Coordinating Council, and has met compliance standards as set forth by NERC Reliability Standards.

Virtually all of EDFR's power sales agreements require it to bear the project performance risks. As a result, EDFR has developed maintenance practices and facilities/equipment monitoring procedures that minimize equipment/facility downtime. This includes crew dispatch and facility restoration practices that are geared to returning facilities to service quickly.

### **Shell**

Shell Oil Company operates various operating control centers for pipeline facilities which it owns and also has operating centers with various SCADA systems that are used to monitor generating facilities under its control.

Shell Renewable Asset Management International (SRAMI) has standard processes to manage emergency responses and to develop emergency response plans. One aspect of this is ensuring that training and drills are conducted on each asset at appropriate intervals. SRAMI uses a standard process to manage emergency response and develop emergency response plans (ERP) that are materially equivalent to the identify health, safety, security, environment control framework.

## **9. Description of the experience of the entity or its affiliate, partner or parent company in acquiring rights of way**

Both EDFR and Shell offer extensive experience in acquiring rights of way. Securing site control including acquiring rights of way to existing transmission facilities is a critical element of EDFR's project development work. The length of transmission lines owned by EDFR is reviewed in Table 1 above. EDFR was responsible for acquiring virtually all of these rights of way.

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<sup>5</sup> One of the options MAOD is also considering is contracting these services to a qualified third-party that provides such services.

[REDACTED]

[REDACTED]

[REDACTED] Shell New Energies offers similar experience given its extensive portfolio of electric generating facilities as well as acquiring rights of way for oil and natural gas pipelines.

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