Table 9-6: Altamira II Generator Specifications

Parameter	GT Generator	ST Generator
Model	MHI	MHI
Rated Power (MVA)	170.628	189.308
Cooling System	Air-cooled	Air-cooled
Power factor	0.90	0.90
Voltage	16.5kV	16.5kV

Figure 9-10: Steam Turbine Generator (Left) and Gas Turbine Generator (Right)

There are three generator step-up transformers ("GSU") at the Altamira II site; one for each of the gas turbine generators and one is for the steam turbine. The GSU takes the generator voltage and increases it to match transmission voltage. All GSUs at the Altamira II site are oil natural air natural ("ONAN") and oil forced air forced ("OFAF"). This means that the transformers are cooled by both natural air and oil as well as forced air and oil where the forced flow is caused by fans and motors.

All three GSUs at the Altamira II site are manufactured by Mitsubishi. The specifications for the transformers on site are provided in Table 9-7. An image of a transformer at the Altamira II site is provided in Figure 9-11.

Table 9-7: Altamira II Transformer Specifications

Unit	Manufacturer	Phases	Cooling	MVA	Voltage (kV)
GT1 Main	Mitsubishi	3	ONAF/OFAF	190	16.5/400
GT2 Main	Mitsubishi	3	ONAF/OFAF	190	16.5/400
ST Main	Mitsubishi	3	ONAF/OFAF	211	16.5/400

Figure 9-11: Altamira II Transformer

After voltage is stepped up at the three GSUs, the power goes to the high voltage switchyard which collects the power from the gas turbine and steam turbine at 400kV. The switchyard is a 400kV air insulated switchgear ("AIS"). The Client replaced and commissioned as new gas insulated switchgear ("GIS") in November 2020. This power is then transmitted to a CFE substation which connects to Mexico's electricity grid. Figure 9-12 shows the switchyard at the Altamira II site.

Figure 9-12: Altamira II Substation

9.2.8 Control Room

The Distributed Control System (DCS) is a system of sensors, controllers, and associated signal processing units that are distributed throughout the plant systems. Each of these elements take part in data acquisition, process control, as well as data storage and graphical display. In Altamira II, the current DIASYS control system was upgraded in 2020 as part of the major inspection.

Figure 9-13: Control Room at Altamira II

9.3 Operations Review

9.3.1 Equivalent Unplanned Outage Factor

The reported monthly equivalent unplanned outage factor (EUOF) for Altamira II for the period between January 2020 – November 2023 is provided in Figure 9-14. The average EUOF during this period is 5.48%. Events that have caused an increased EUOF at Altamira II that impacted operation are highlighted in Appendix A.

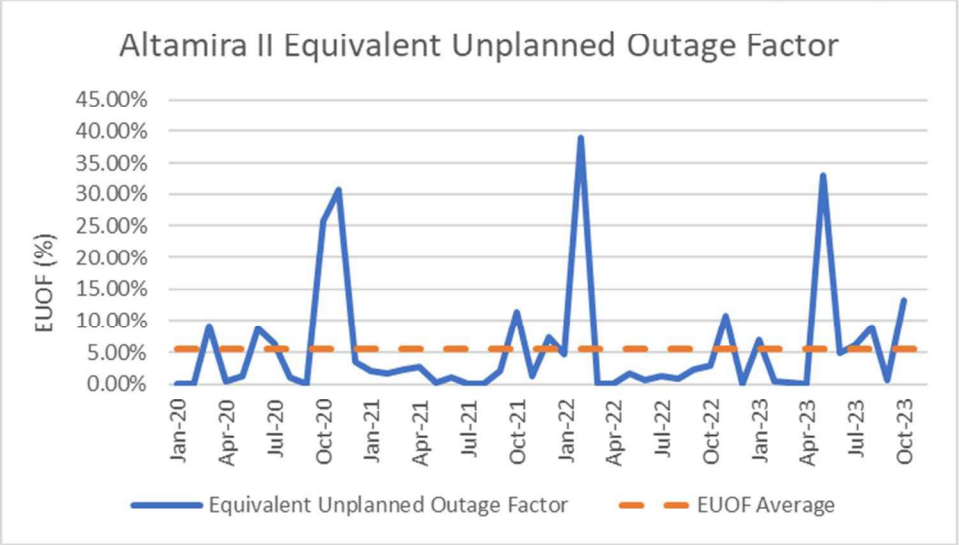

Figure 9-14: Altamira II's EUOF from January 20 – November 2023

9.3.2 Heat Rate

The historical heat rates for Altamira II from January 2020 – November 2023 are provided in Figure 9-15, respectively. The weighted average heat rate during this period is 6,928 kJ/kWh.

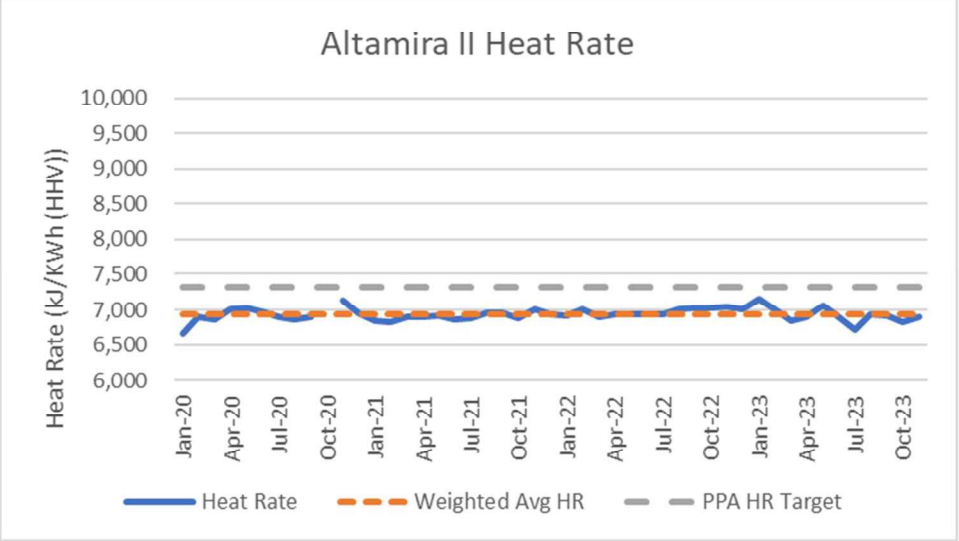

Figure 9-15: Monthly Heat Rate for Altamira II from January 2020 – November 2023

9.3.3 *Generation*

The monthly power generated (GWh) of the plant from January 2020 to November 2023 is shown in Figure 9-16. The average net power generated for Altamira II during this period is 272 GWh per month. Power output fluctuations are caused by reduced availability due to outages and changes in demand.

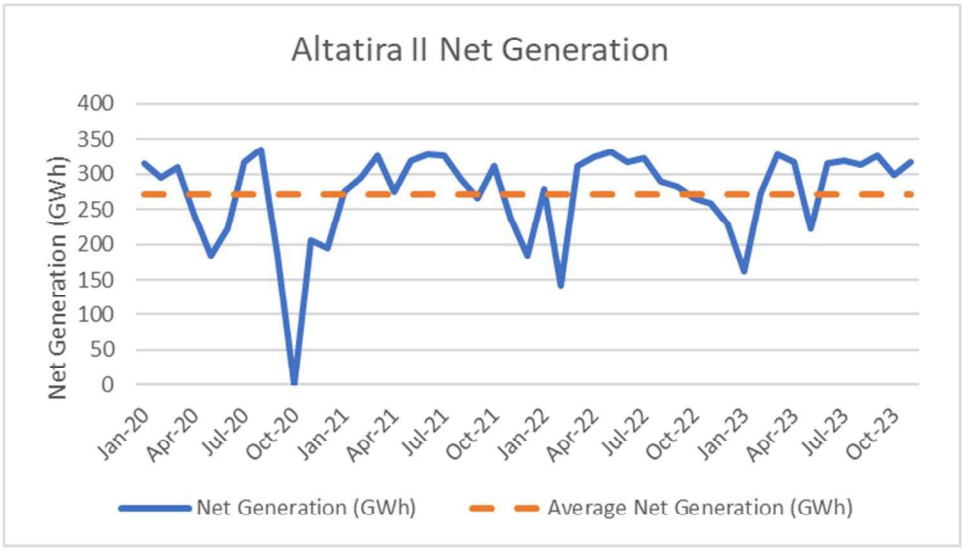

Figure 9-16: Monthly Net Power Generated for Altamira II from January 2020 – November 2023

9.4 Maintenance Review

The Altamira II plant utilizes the services of Mitsubishi Power Systems (MPS) for scheduled and emergent services on the gas turbines. The Steam Turbine and Generators utilize ad hoc services for inspections and repair. The plant utilizes the Valia Maintenance Program for all major, scheduled, and emergent maintenance services.

9.4.1 *Spare Parts Inventory*

Inventory for the Altamira II site has emergency spares and routine replacement parts included in the warehouse. Gas Turbine spares are not part of the warehouse materials. The Client relies on the response time under the LTSA to have gas turbine parts delivered to the site within 48 hours otherwise the LTSA contractor will face a liquidated damage penalty. Hatch considers the spare parts inventory for the remaining plant except the gas turbine spares at Altamira II to be reasonable to mitigate unavailability. In addition, BEMH has budgeted amounts to purchase an inventory of gas turbine spares in the CAPEX in the Financial Model for the Portfolio.

Currently Altamira II has a higher inventory of consumables than the other sites. This is due to the utilization of the Mitsubishi Turbine Generators. The specialty parts for these machines are not shared with Rio Bravo or Saltillo requiring Altamira to maintain more consumables to support operations.

9.4.2 *Maintenance Plan*

Figure 9-17 shows the maintenance history for the prime equipment from 2023- 2035. The F4 upgrades have extended the planned operating interval to 32,000 hours and allow for service intervals every four years.

Steam Turbine service intervals are matched with major inspections to ensure the steam turbine outage window does not extend an otherwise short inspection of the gas turbine.

Maintenance Schedule

		2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Altamira II	CT1	BI	BI	HGPI	BI	BI	BI	MI	BI	BI	BI	HGPI	BI	BI
	CT2	BI	BI	HGPI	BI	BI	BI	MI	BI	BI	BI	HGPI	BI	BI
	ST	-	-	-	-	-	-	O	-	-	-	-	-	-

Figure 9-17: Altamira II Maintenance History

9.5 O&M Staffing

Altamira II is staffed with 37 personnel that support the overall site with administration and technical services. There is 1 plant manager with 5 support staff and 31 staff as part of the O&M organization.

Within the O&M organization, there are 9 maintenance technicians, 1 planner and 21 operations staff for Altamira II. Hatch considers the staffing to be adequate for the plant.

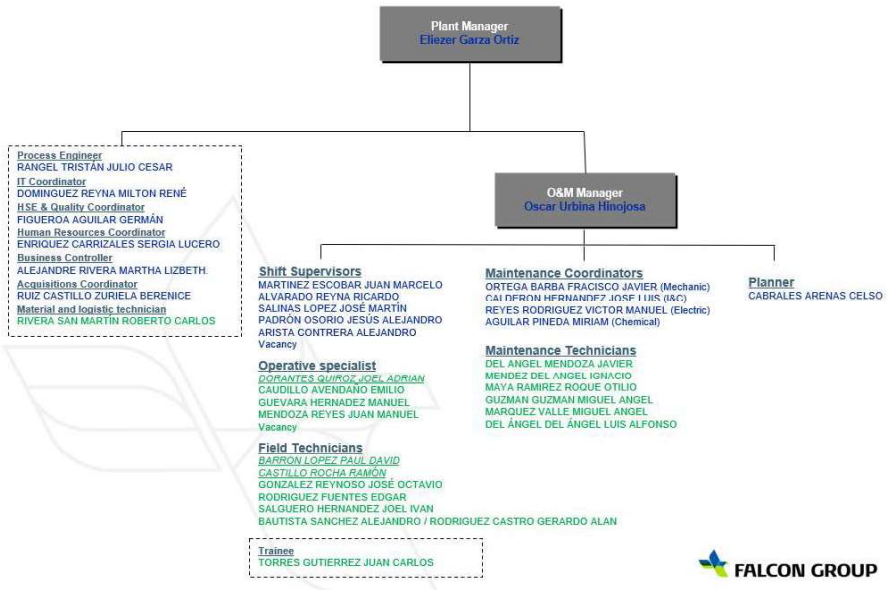

Figure 9-18: Altamira II's Organization Chart

9.6 Project Agreements

This section provides an overview of the asset material agreements for Altamira II. The analysis is limited to providing a summary of the contract assessing the technical related aspects and providing an opinion on scope, gaps, and risks with regard to ongoing and future operations of the asset.

Table 9-8: Altamira II Project Agreement Summary

Agreement	Contract End Date
Power Purchase Agreement	May 1, 2027
Long Term Service Agreement	April 30, 2027
Gas Interconnection Agreement	June 2, 2029
Fuel Supply Agreement	May 1, 2027
Water Supply Agreement	July 30, 2026

9.6.1 *Power Purchase Agreement*

A Power Purchase Agreement (PPA) has been entered into by Comisión Federal de Electricidad ("Commission") and Electricidad Águila de Altamira, S. de R.L. de C.V. ("Producer") in April 7, 2000. The PPA is a CFE legacy template that has been used numerous times to procure thermal generation through Independent Power Producers (IPPs) in Mexico. The term of the agreement is 25 years from the Commercial Operation Date of May 1, 2002. Capacity Guarantees in Summer Design Conditions with Base Fuel is 495 MW and 405 MW on alternate fuel.

The contract payments consist of two components, capacity charges and energy charges. The Fixed Capacity Charge is denominated in United States Dollars and payment for operation and maintenance is denominated in Mexican Pesos and adjusted for escalation in accordance with the terms of the PPA.

If the asset is not capable of meeting the guaranteed heat rate, the fuel cost will not fully pass through to the Commission. The asset will be penalized for not being able to meet the guaranteed heat rates by having to pay the additional cost of fuel. This can have significant financial implications. Furthermore, unavailability will reduce the Capacity Charge Payments received from the Commission.

The station is well suited to meet the requirements of the PPA throughout the operating life.

9.6.2 *Contractual Service Agreement*

Agreement between Electricidad Águila de Altamira, S. de R.L. de C.V. ("Purchaser") and Mitsubishi Power Americas, Inc.("Supplier").

The term of the contract is till April 30th, 2027.

Consists of a fixed and Variable Fee:

1. Fixed Fee: Amount of US$150,000/Covered Unit/year divided and payable monthly.
2. A monthly Variable Fee in the amount of $USD180/EFH (Equivalent Fired Hours)/Covered Unit.
3. A yearly Capacity Fee will be paid for each MWh sold by Purchaser in the Wholesale Electricity Market with a minimum of US$150,000 per year.

The Capacity Fee which is a fee for each MWh generated from the Facility sold by Purchaser in the Wholesale Electricity Market would involve sharing between 10% to 50% of the

revenue made from selling electricity to the wholesale electricity market. Current revenue sharing has substantial financial impacts. Revenue sharing combined with forecasted dispatch will have significant financial impacts if this LTSA is renewed.

The LTSA also include guarantee for reliability of the Covered Unit, output, and heat rate recovery after planned inspections, outage durations and response times to mobilize staff and deliver parts to the site.

The terms of the LTSA are customary within the power industry and provide incentive for the service provider to exceed the performance conditions in the PPA.

9.6.3 *Fuel Supply Agreement*

Agreement between Electricidad Aguila de Altamira, S. de R. L. de C.V. ("Buyer") and Pemex ("Fuel Supplier"). This contract expires May 1, 2027. The fuel specified in the FSA is Natural Gas. No alternate fuel is to be supplied under the Altamira II FSA. The expected quantity of fuel to be supplied is set as a multi-annual flexible limited base of 22,176 Gcal (Contractual Quantity) of fuel per day. This amount can be reduced to as low as 11,088 Gcal (lower limit) of fuel per day under if requested by the Buyer. The fuel available is sufficient to meet the requirements of the PPA.

The fuel supply agreement is sufficient to meet the operating requirements of the station.

9.6.4 *Gas Interconnection Agreement*

The agreement is between Pemex-Gas y Petroquimica Basica (PGPB) and Electricidad Águila de Altamira, S. de R.L. de C.V. The agreement was signed on July 24, 2001, and will remain in full force and effect until the revocation or termination of the Altamira II Self-Use Gas Transportation Permit (June 6, 2031) and/or PGPB's Gas Transportation Permit (June 2, 2029).

9.6.5 *Water Supply Agreement*

Agreement between Comision Nacional del Agua ("CONAGUA") and Altamira II. The term of the agreement is 25 years from the date of the agreement which is July 30, 2001. The concession or permit to take water contract is for taking water from the Laguna de Champayan at the specified extraction point, coordinates have been provided in the agreement (latitude 22º 23' 21.0", longitude 97º 50' 40") and includes permission for construction of the associated works to convey the raw water (3 pumps of 200HP and a set of watermains) to a facility for treatment. The concession states the annual maximum volumes for extraction of water (5,307,830 m3/yr), consumption (4,291,670 m3/yr) and includes permit to discharge (1,016,160 m3/yr). No contract payments mentioned as this is a concession agreement to extract water.

The water supply agreement is sufficient to meet the operating requirements of the station.

10. Gasoducto Del Rio

10.1 Pipeline Overview

Figure 10-1: Gasoducto Del Rio Location

Pipeline gas is supplied from the USA via the Tennessee Gas Pipeline and crosses the US – Mexico border near Nuevo Progreso, Tamaulipas. Pipeline capacity is designed to carry the equivalent of 410,000mmbtu/d of gas. The pipeline consists of two sections: a 30" line from the border to Campo Brasil Station (approximately 26 km), and a 20" line from Campo Brasil to Rio Bravo III and IV power stations (approximately 22 km). A 16" lateral (approximately 6 km) supplies the Portes Gil power station. The pipeline is designed for a maximum pressure of 1000 psig.

The Frontera Station is the first station on the GDR pipeline, and consists of an ESD pipeline isolation valve, filter separation to remove potential liquids, a scraper launcher/receiver, instrumentation and telecommunication systems, flowmeter and as gas chromatograph.

At each of the pipeline take off to the stations Campo Brasil and Portes Gil, there are filter separators, flow measurement, instrumentation and SCADA communication systems, a gas chromatograph and monolithic isolation joint. Anahuac station has a scraper receiver and a monolithic isolation joint. The Central Anahuac Station has a filter separator and a monolithic isolation joint.

10.2 Operations and Maintenance Review

10.2.1 General

Operation and Maintenance adhere to the NOM Official Mexican Standards, NOM-001-SECRE-2010 and NOM-007-ASEA-2016.

GDR is certified to:

- NMX-SAST-45001-IMNC-2018 (ISO 45001:2018), Sistemas de Gestión de Seguridad y Salud en el Trabajo Requisitos ('Occupational Health and Safety Management Systems Requirements')
- NMX-SAA-14001-IMNC-2015 (ISO 14001:2015), Sistemas de Gestión Ambiental - Requisitos con orientación para su uso ('Environmental management systems - Requirements with guidance for their use')
- NMX-CC-9001-IMNC-2015 (ISO 9001:2015), Sistemas de Gestión de la Calidad – Reuisitos ('Quality Management Systems – Requirements.

10.2.2 Operations

The GDR General Operation Procedure is written to Comply with ISO 9001: 2008 – 7.5.

Operation activities and responsibilities are divided into two areas:

- The shift Manager, responsible for daily routine and continuous operations.
- Operational Specialists, responsible for monitoring and controlling the system to Mexican Natural Gas Standards.

Daily operations are performed in three shifts.

Chromatograph analysis of the gas is a continuous operation, and reported on monthly, to ensure gas quality meets requirements.

10.2.2.1 Availability

The GDR pipeline had 100% availability per KPI's provided.

10.2.2.2 Gas Specifications

Gas meets specification on H2S, water content and Wobbe per KPI's provided.

10.2.2.3 Operational Issues

- Liquids at gas turbine combustor strainers were deemed to be as a result of gas pressure reduction inside the power plants, and not due to out of spec gas. As a result, liquid separators were installed at the combustion turbine inlets.
- Failures of Gas Chromatographs is an ongoing issue that is being addressed by the Client currently.
- Frequent power outages at the GDR sites have been attributed to adverse weather conditions and failures on the part of the supplier, Comisión Federal de Electricidad (CFE). However, it was noted by the Client that these have not affected the availability of the GDR pipeline.

10.2.3 Maintenance

The GDR General Operation Procedure is written to Comply with ISO 9001: 2015 – 7.1.3.

The maintenance area is divided into three roles:

- Pipeline supervisor, who prepares the Preventative Maintenance Program of the areas of Patrol, Instrumentation and Telecommunications.
- Instrumentation and Control Maintenance Technician, who addresses any corrective maintenance, supervises contractor work, and provides monthly reports on activities.
- CAC Operations Specialist, who monitors maintenance work and ensures safety in the field is adhered to.

10.2.3.1 Maintenance History

A comprehensive maintenance program exists, which includes preventative maintenance and corrective maintenance.

The preventative maintenance program is reviewed annually. Responsibility resides with each speciality group. Specialist contractors are used for the actual work where required. Preventative maintenance intervals range from a 3-month schedule to a 15-month schedule, depending on activity. The 3-month interval includes wall thickness testing, coating inspections and leak detection at the stations, filter purging and instrumentation inspection and calibration where required. Records indicate that preventative maintenance is always completed on time.

Corrective maintenance is initiated by the area specialist when a fault in the system is detected. For the SCADA system is the Rio Bravo II specialist, and for other areas is the respective specialist in the Patroling, Instrumentation and Telecommunications specialist. Records indicate that the corrective maintenance is completed within a month of identification.

Upgrades in various aspects of instrumentation, communication and cathodic protection are either planned or underway. These are described as Special Projects.

10.2.3.2 Maintenance Issues

Hatch noted that GDR has faced several recurring maintenance needs previously. The notable and recurring issues include:

- Damage to Cathodic poles by third parties.
- Pipeline coating - regular repair is done when problems are identified.
- A gas leak on the 30” pipeline was repaired by Hot Tap and bypass. Similarly, a leak was repaired on the 16” Rio Bravo II pipeline.

The Client has implemented the necessary programs and funding to support the sustained safe operation of the pipeline for the model period.

10.3 O&M Staffing

The operations responsibility is divided into two areas and the maintenance responsibility is divided into three areas as outlined above. The 100% pipeline availability, the prompt and timely completion of maintenance activities, indicate that the facilities are manned adequately.

10.4 Pipeline Integrity

Corrosion is expected and has occurred throughout the operating life of the pipeline. The cathodic protection system is in the process of being upgraded to improve corrosion performance. Where identified, external coating damage is being repaired.

10.5 Pipeline Design

In general, the design adheres to ASEA NOM 007. The pipeline has been operating for a considerable number of years which would point to its suitability. Furthermore, per the IE report, the pipeline is inspected and evaluated annually according to ASEA Nom 007. The concern raised about the safety of the pipeline may be raised as a result of the current condition rather than the design of the pipeline.

10.6 Lifetime Extension

The intent is to operate the assets for a period of 15 years beyond the PPA period of 25 years. The IE has estimated in their report the work required to extend the lifetime, and the CAPEX required to do so. However, due to the nature of the failures resulting from Cathodic Protection and coatings, predictions of actual repairs are not possible, and thus activities for the Lifetime Extension are risk-based projections.

10.6.1 Stations

Regular preventative maintenance has resulted in stations being in good condition. Piping is easily accessible, and necessary inspections have been done routinely. No major repairs have been required to date. If the level of preventative maintenance is maintained, no major repairs and equipment replacement is envisioned.

10.6.2 Pipelines

At the time of the asset purchase, 450 coating repairs and 3 pipeline repairs had been completed. New “smart rectifiers” have been installed to improve the cathodic protection system.

CIPS, ACVG and ILI surveys are expected for the future.

10.7 Project Agreements

The agreements associated GDR include the following:

- Interconnection Agreement with the Tennessee Gas Pipeline Company executed on November 14th, 2002.
- Interconnection Agreement with Central Anahuac, S.A. De C.V. (CAC) executed on August 1st, 2003.

- Natural Gas Transportation Services Agreement with Pemex Gas and Petroquimica Basica (User) and Gasoducto del Rio, S.A. de C.V. (Carrier) executed on September 26, 2002.
- Natural Gas Transportation Services Agreement with Comisión Federal de Electricidad (User) and Gasoducto del Rio, S.A. de C.V. (Carrier) on March 12th, 2015.

11. Technical inputs to the Clients Financial Model

Hatch has contributed to the Clients Financial Model from September 15, 2023, through recommendations of unit capacity, heat rate, forced outage rate, scheduled outage rate, outage duration, Lifetime Extension CAPEX and O&M Budget. Hatch has not reviewed the Client's model for mathematical accuracy, formula functionality or completeness in performance of proforma determination. As such, Hatch makes no assertion regarding the accuracy of the model, or the information provided. The Clients Financial Model is included as Appendix B.

11.1 Unit Capacity

All the stations within the Valia portfolio are bound to capacity requirements in the Power Purchase Agreements. Generally, capacity greater than target is advantageous for the financial performance of the facility. The recent performance of the units is noted in the individual sections for each unit. Hatch noted that EVM I should be capable of meeting the model requirements for capacity and is demonstrating acceptable performance and reliability.

Hatch reviewed the Client's Model inputs for EVM II and confirmed inputs to the model as shown in Table 11-1.

Table 11-1: Capacity and Recovery for EVM II

EVM II	Client Model
Nominal Capacity	816.287 MW
Capacity Recovery Factor	0.1670

The remaining generating assets were evaluated based on past performance and known unit modifications that were recently installed or planned. This analysis included building performance curves based on operating data to determine a likely performance scenario. The Unit capacity recommendations for each unit are provided in the Figures following in this section. The tabular data is included in the Client's Model.

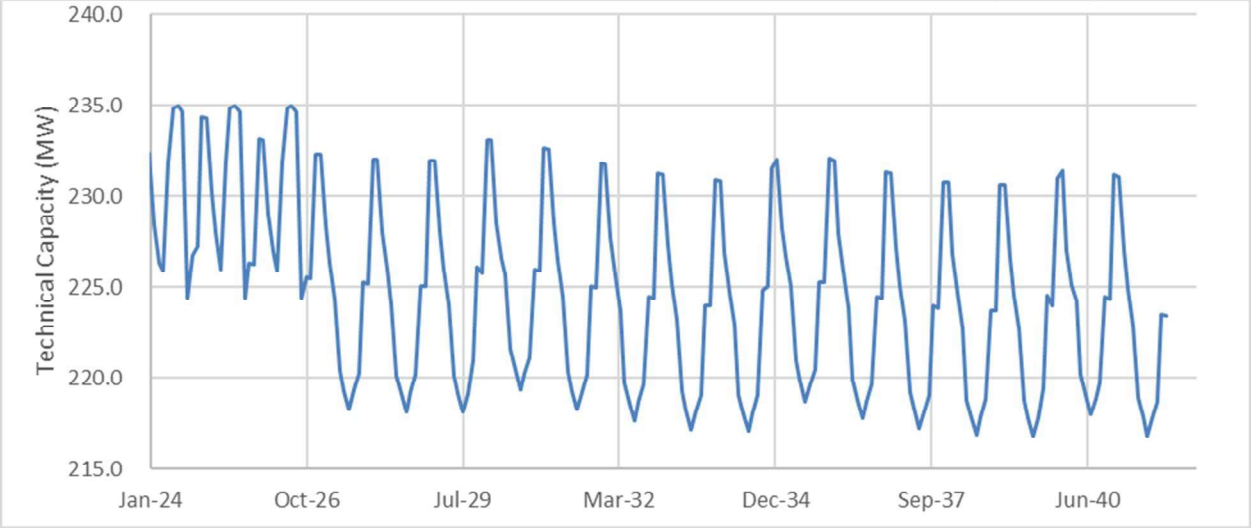

Figure 11-1: Capacity in the Financial Model for Saltillo

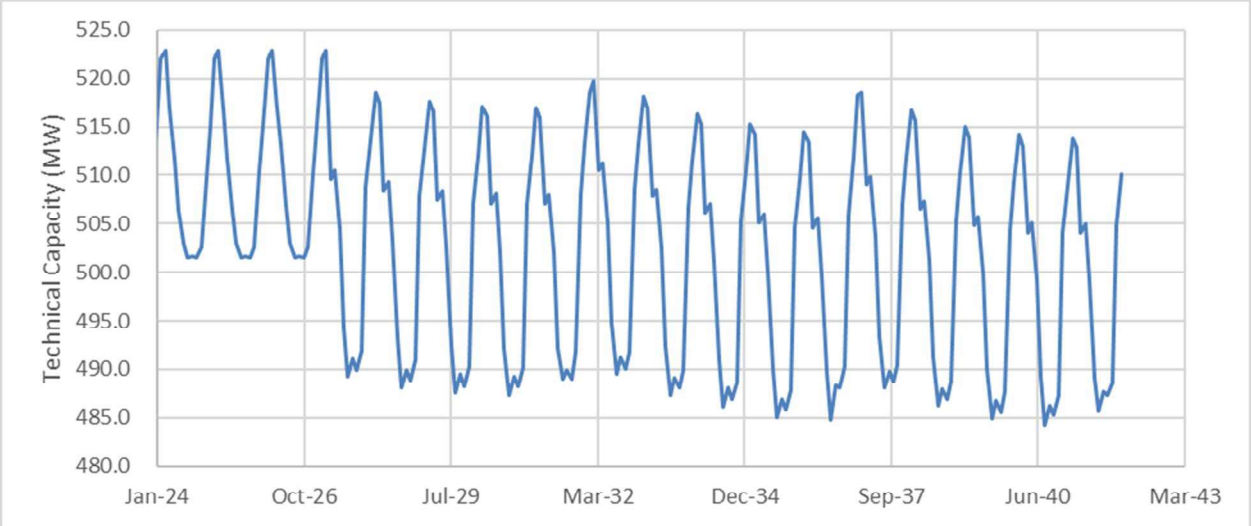

Figure 11-2: Capacity in the Financial Model for Rio Bravo II

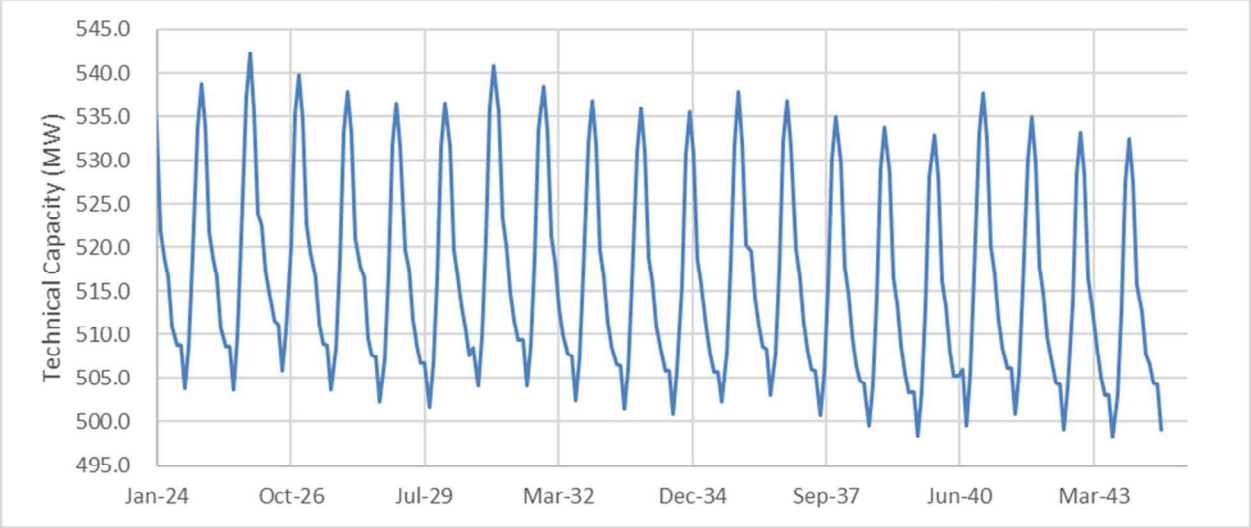

Figure 11-3: Capacity in the Financial Model for Rio Bravo III

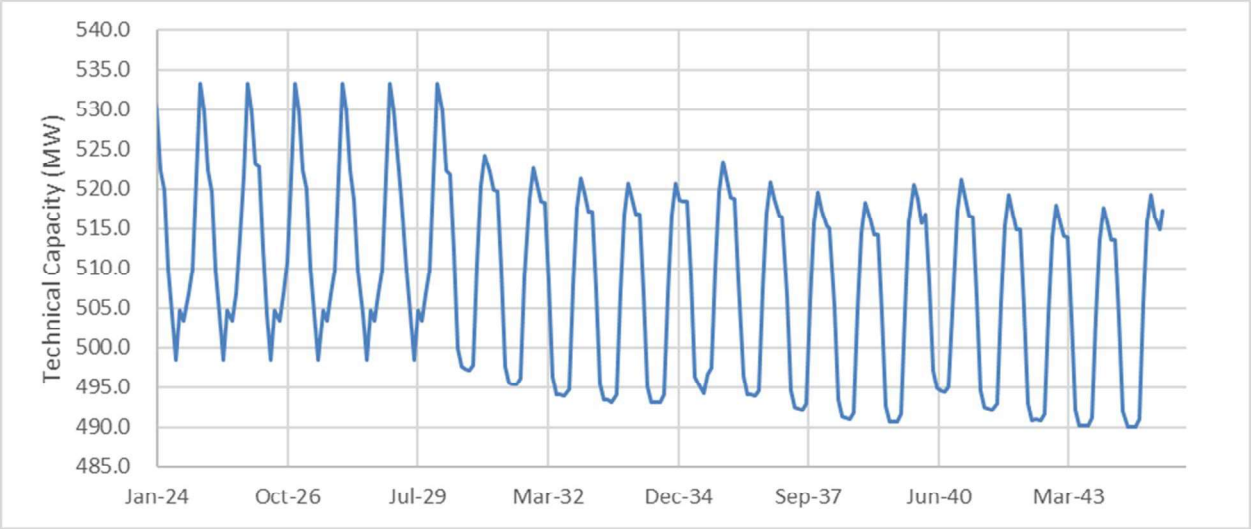

Figure 11-4: Capacity in the Financial Model for Rio Bravo IV

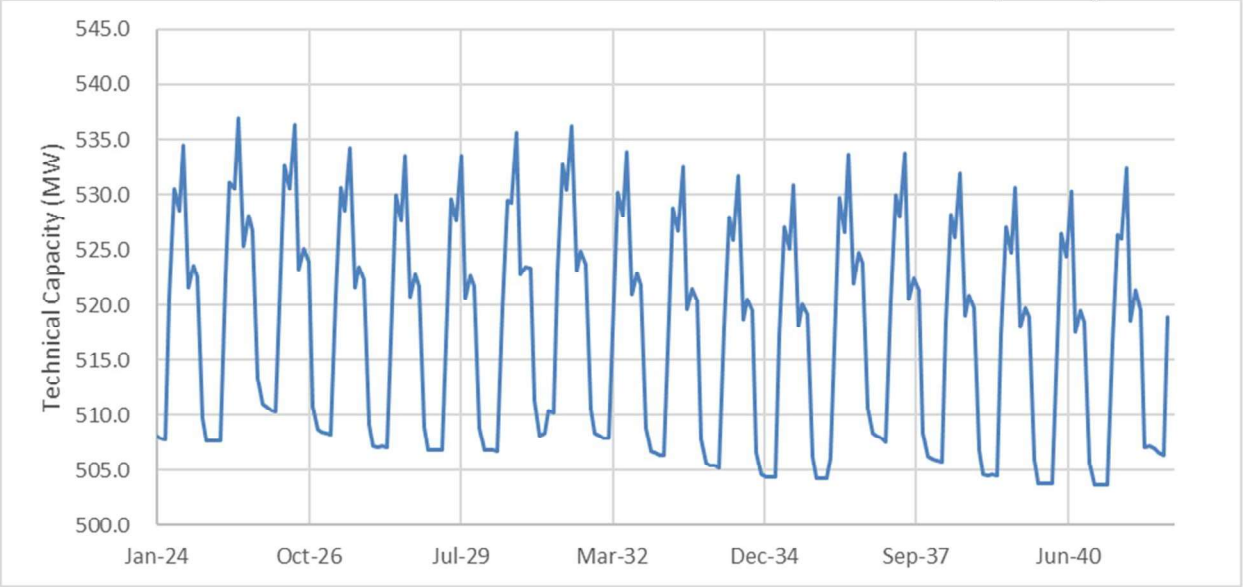

Figure 11-5: Capacity in the Financial Model for Altamira II

11.2 Unit Heat Rate

All the stations within the Valia portfolio are bound by heat rate requirements in the Power Purchase Agreements. Generally, heat rate below target is advantageous for the financial performance of the facility. The recent performance of the units is noted in the individual sections for each unit. Hatch noted that EVM I should be capable of meeting the model requirements for heat rate and is demonstrating acceptable performance. Hatch reviewed the Client's Model inputs for EVM II and confirmed inputs as shown in Table 11-2. The model inputs form the baseline for plant performance. The model data provided in Appendix B shows the associated degradation values based on the provided baseline in Table 11-2.

Table 11-2: Heat Rate and Recovery for EVM II

EVM II	Client Model Inputs
Heat Rate	6.666 GJ/kWh without duct firing 8.734 GJ/kWh for duct firing capacity only 6.763 GJ/kWh with duct firing capacity*
Heat Rate Recovery Factor	0.096

*Heat rate is based on average operations including start-up and part-load operation

The remaining generating assets were evaluated based on past performance and known unit modifications that were recently installed or planned. This analysis included building performance curves based on operating data to determine a likely performance scenario. The Unit heat rates for each unit are provided in the Figures following in this section. The tabular data is included in the Client's Model.

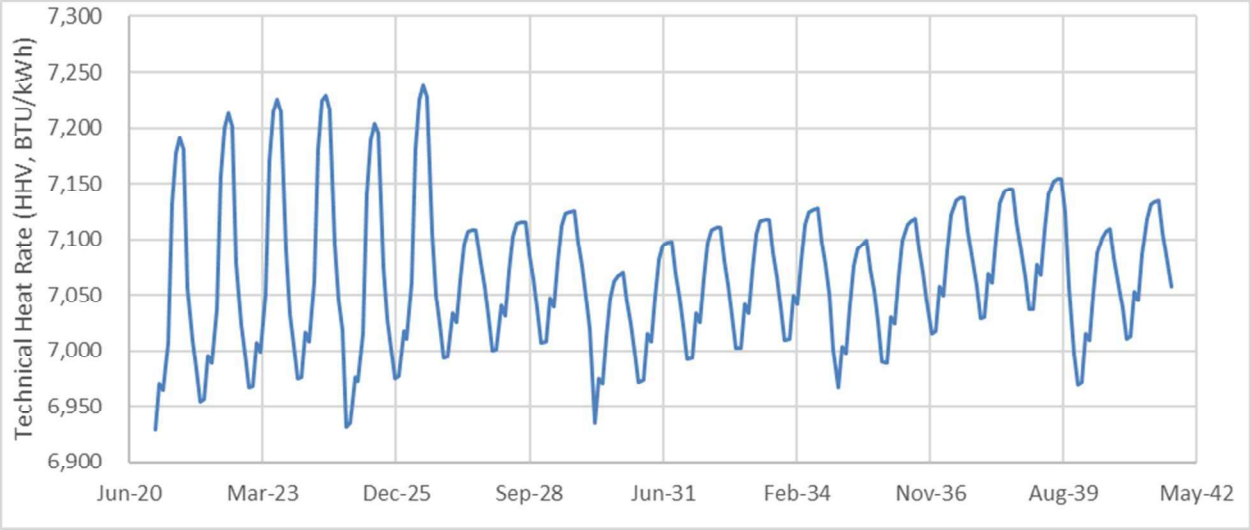

Figure 11-6: Hatch Proposed Heat Rate for Saltillo

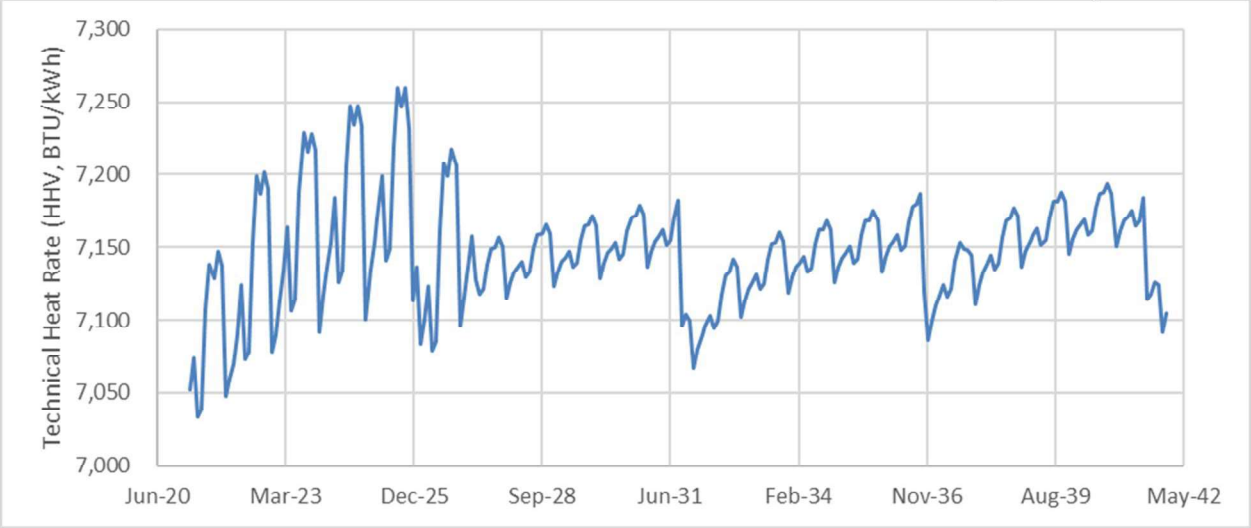

Figure 11-7: Hatch Proposed Heat Rate for Rio Bravo II

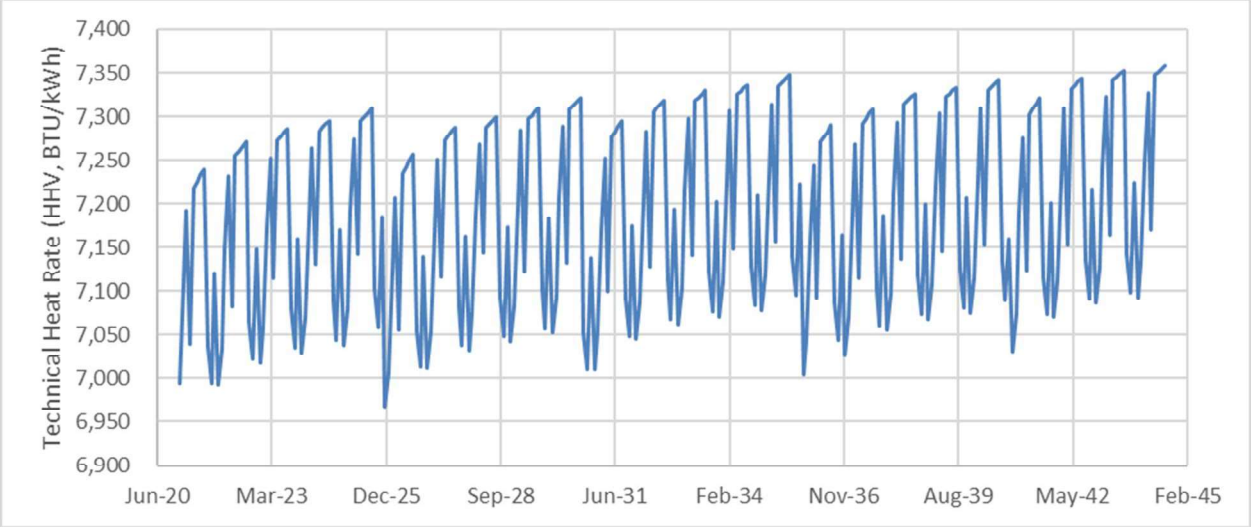

Figure 11-8: Hatch Proposed Heat Rate for Rio Bravo III

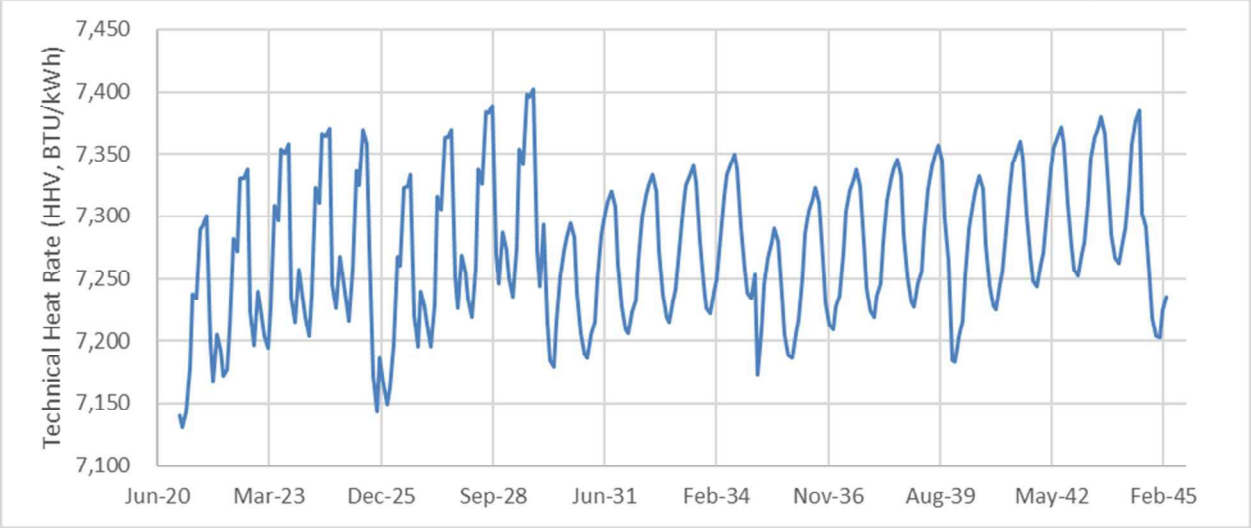

Figure 11-9: Hatch Proposed Heat Rate for Rio Bravo IV

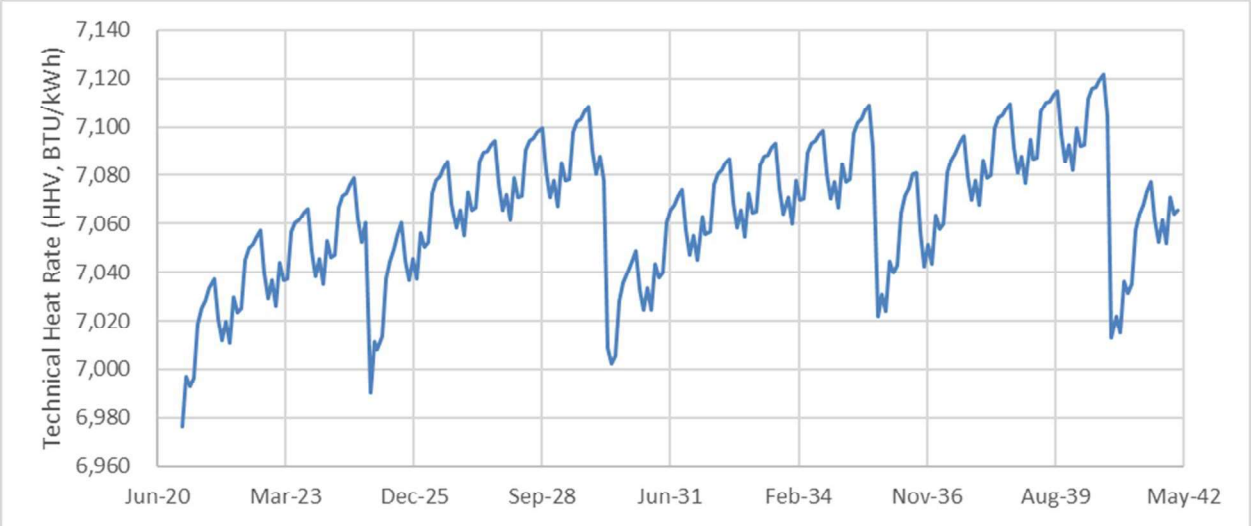

Figure 11-10: Hatch Proposed Heat Rate for Altamira II

11.3 Scheduled Outage Rate

Scheduled outages are periods of derate or shutdown that are arranged with the system operator and scheduled to avoid impact to the requirements of the PPA. Scheduled outages are advantageous for the maintenance of the plant when actions need to be taken to correct issues that are impacting operations of the plant.

The Client's model has a scheduled outage rate of 1.5% for EVM I. Hatch considers 1.5% to be realistic based on performance for the last 30 months and the EVM I mission of peaking power. Hatch recommends keeping the scheduled outage rate for EVM I at 1.5%.

Table 11-3: Scheduled Outage Rates

Plant	Client's Model	Period
EVM I	1.5%	All

The Client's model had a scheduled outage rate of 2.0% for EVM II. Hatch recommends keeping the initial rate at 2.0% and then raising the scheduled outage rate for EVM II after 20 years of operation as indicated in the table below. The increase in scheduled outage time is intended to reflect the additional maintenance required to keep the plant running at the performance that has been included in the Clients model.

Table 11-4: Scheduled Outage Rates for EVM II

Plant	Client's Model	Period
EVM II	2.0%	0-19 yr
EVM II	2.25%	20-24 yr
EVM II	2.5%	25-29 yr
EVM II	2.75%	30-34 yr
EVM II	3.0%	35-39 yr
EVM II	3.25%	40-44 yr

The remaining generating assets were modeled without scheduled outage considerations. This manner of modeling places a higher focus on the forced outage considerations and will typically result in higher forced outage rate assumptions. The Contract Service Agreements for EVM I and II consider scheduled outage time as part of their availability targets, whereas those for the remaining assets do not consider scheduled outage time.

11.4 Forced Outage Rate

Forced outages are periods of derate or shutdown that are not arranged with the system operator and impact meeting the requirements of the PPA. Forced outages are required for the maintenance of the plant when actions need to be taken to correct issues that are preventing normal operations of the plant.

The forced outage rate assumption in the Financial Model is used to determine the number of hours each month that each facility is available to generate electricity based on the dispatch factor.

The outage rates in the model have been compared against the performance of the units over the base three years. The units have generally performed well with few noted operational or human performance events contributing to forced outages. This is attributed to operating programs that focus on human performance and task planning for operating maneuvers. The issues that have created high forced outage rates are related to major equipment issues that were beyond the scope of the operator's view. These issues have been addressed by the

OEM with solutions implemented or planned for the fleet. Based on these actions we consider the model targets for EFOR as reasonable.

Table 11-5: Forced Outage Rate Assumptions

Plant	Historical Forced Outage Rate (Avg. '20 – '23)	Client's Forced Outage Assumption**
EVM I	1.09%	1.5%
EVM II	3.09%*	3% -> 4%
Saltillo	7.53%	4.6% -> 4%
Rio Bravo II	8.27%	4% -> 4.5% -> 4%
Rio Bravo III	2.07%	4%
Rio Bravo IV	5.88%	4.7% -> 4%
Altamira II	5.48%	4.5% -> 4%

*'2021 – 2023
** EVMI and II 2024-2045, others 2024-2040

11.5 Maintenance

Maintenance timing and assumptions are utilized in the financial model to determine the available time for energy production during a given year based on length of planned outage and event timing based on equipment outage interval timing.

11.5.1 Contract Service Agreements

The generating assets are covered by contract service agreements with General Electric (GE), Mitsubishi Power Systems (MPS) and Power Systems Manufacturing (PSM). The assignment by plant is included in the Table 11-6.

Table 11-6: Contract Service Agreement Assignments

Unit	Contract Service Agreement Provider
EVM I	GE
EVM II	GE
Saltillo	PSM
Rio Bravo II	MPS
Rio Bravo III	MPS
Rio Bravo IV	MPS
Altamira II	MPS

11.5.1.1 Contract Service Agreement Costs

The Contract Service Agreement (CSA) costs for the plants in the Financial Model are hard coded values within the model that runs throughout the life of each combined cycle power plant in the portfolio. The current CSAs term currently aligns with the end of the PPA term.

The Client has assumed that CSAs costs will continue after the termination of these agreements.

Hatch noted that the costs utilized in the Financial Model is reasonable based on terms of the CSAs for each respective plant in the Portfolio based on the anticipated operating profile in the Financial Model. The accrual of costs will vary depending on the operating hours and number of starts of the Portfolio.

11.5.1.2 Planned Maintenance Outage Durations

The Financial Model includes assumptions for planned maintenance duration occur at the facilities in accordance with the OEM recommended maintenance intervals and the associated downtime for each event vary based on the type of planned maintenance event. Hatch noted that the Client proposed assumptions in the Financial Model were considered reasonable and included a reasonable buffer between the CSA outage guarantees to complete activities under normal circumstances.

11.6 Life-Time Extension CAPEX

Lifetime Extension CAPEX is necessary as a power plant advances in age. The funding is utilized for renewal of various parts of the power generation process and updates to the equipment with known obsolescence intervals. Hatch has reviewed the capital budgets for the portfolio and considers them to be representative of the investment needed to meet performance expectations over the modeled period. The Client CAPEX forecast is provided in Appendix C.

Hatch considers this to be minimal given the potential work that would be expected for a plant at the time. Note that these are preliminary without doing a detailed study of the condition of each individual system at the plant.

The LTE review is based on the following assumptions:

- EVM-I maintains a low dispatch factor and continues to operate as a peaking power facility.
- Estimates are based on factored estimates and desktop review of the condition of the plants required to continue operation as forecasted in the Financial Model.
- No upgrades were considered in the LTE CAPEX.
- No regulatory changes that require additional investment to comply with new requirements that are unknown at the time.

Appendix A

Summary of Major Events Impacting Availability

A.1 Summary of Major Events Impacting Availability

Table B-1 provides a summary of the major events that had material impact on the availability of the Portfolio in the last 3 years. Hatch noted any corrective actions taken and any outstanding items based on open incidents from the previous history. In general, the Client has taken reasonable steps to address past issues that have arisen.

Table A-1: Summary of Major Events Impacting Availability

Plant	Date of Incident	Summary of Incident	Corrective Actions Taken	Outstanding Items
EVM II	October/ November 2022	During the annual borescope inspection of GT11, a 4-inch hole was found on the Combustor Can #4 in its Unibody.	A replacement of the GT11 Unibody #4 took place.	None.
EVM II	February 2023	During the annual borescope inspection of GT12, a 4-inch hole was found on the Combustor Can #9 in its Unibody.	A replacement of the GT11 Unibody #9 took place.	None.
EVM II	March/ April 2023	The Stage 1 nozzles (S1N) and Stage 1 buckets (S1B) on GT11 were identified as high risk due to missing material.	The S1N and S1B were replaced.	None.
EVM II	March 2023	The Stage 1 nozzles (S1N) GT12 were identified as high risk due to missing material.	The S1N were replaced.	None.
All Falcon Plants	May 2021	Amendment in Grid Code which requires all power plants to comply with the requirements in the technical manual. No plants in the portfolio were equipped with all necessary equipment or communication protocol to meet the new standard.	Instrument transformers and other equipment were added to each plant and RTUs were updated to conform with the new platform requirements.	AVR and protection relays upgrades

Plant	Date of Incident	Summary of Incident	Corrective Actions Taken	Outstanding Items
Saltillo	April 22, 2021 – May 28, 2021	Arcing event at the main lead of the generator caused a build up of melted material through hydrogen cooling passage of the rotor and carbonized material were found on the main lead bushings along with damage to the T4 flange. This issue could affect similar generators at Rio Bravo.	Client installed the rotor from the spare generator into the plant at Saltillo. Replacement bushings were not immediately available and had long lead time of 6 months. To expedite the return to service of Saltillo, the Client repaired the bushings with a local repair shop in Mexico.	Bushing have been replaced and main leads have been replaced with an improved design in other affected units.
Rio Bravo II, III, IV	January 2021	Row 3 blades on all Rio Bravo GT units unable to complete 32,000 operating hours due to degradation on the blades.	Rotor in Rio Bravo II unit was replaced with one having larger row 3 radial disc cooling holes to ensure it lasts the full 32,000 hours.	New rotor installed in Rio Bravo III unit with modified rotor disc cooling holes and thicker TBC coated blades during June 2022 outage. Performance is being monitored on both.
Rio Bravo II	February 2022	Load rejection on GT2 unit caused by incorrect installation of and missing anti-rotation bolts. This led to reversed airflow and caused significant damage in the compressor section.	The damaged rotor was replaced, and the anti-rotation bolts were welded into place to eliminate confusions about the configuration.	RCA and corrective actions were requested to Mitsubishi in order to improve their performance during these activities. MPA noted this attributed to Human Error.
Rio Bravo II	October 2021 – May 2022	Multiple diesel capacity tests failed due to high blade path temperature spread from clogged filters misconnected tubing lines, a fire from a leak in combustor 14, multifunction block failures and witch hat filter fouling.	Completed a root cause analysis on the reliability issue and installed recommended changes.	Liquid fuel testing has improved significantly with only 1 of 12 transfer tests having issues during 2023.
Rio Bravo II	October 2021	Emergency Extra Works executed during major inspection regarding issues with GT1 and GT2 bearings (lack of adherence and heavy fretting), IGVs (found out of MHPS criteria) and HRSG (found with cracks).	Bearings re-babbited and skim cut, IGVs replaced and/or machined, and HSRGs repaired to prevent further cracking.	None

Plant	Date of Incident	Summary of Incident	Corrective Actions Taken	Outstanding Items
Rio Bravo III	January 2021	HRSG1 Spool 20 in Row 4 of the 3rd HPSH was the wrong thickness (0.148 vs. 0.191).	Newly installed reel of pipe that did not meet the original thickness due to the difficulty to procure the pipe.	Scheduled to be replaced in November 2023.
Altamira II	November 2021 – December 2021	Discoloration found in Phase C of the neutral side of the main lead in the steam turbine generator with cleat area burnt and tapes and connections heavily charred and pitted. Lead insulation found charred and scaled with construction layer separating and bolts with no clamping force.	Burnt tape and support cleats removed with cleats cleaned and main bus lead retaped. Damaged insulation was removed and new bolting hardware installed.	Look into replacing split ring lock washers with properly sized spring washers and review OEM assembly drawing for washer recommendations.
Altamira II	March 2018 – January 2023	Row 1 vane airfoil degradation and contamination on both gas turbines. Cooling holes obstructed by deposits in GT1 from iron oxide.	Current F4 row 1 vanes were replaced with F4 row 1 vanes and fuel gas heater mechanically cleaned. New fuel gas heater was installed and row 1 vanes were replaced with F4 design in 2023	None
Saltillo	April 13, 2022	Plant trip due to high combustion turbine spread when operating on alternative diesel fuel. Due to dirt and obstruction of pipes and filters of pilots and stages A and B of diesel. Excess water through stage water injection valve during rinsing causing alarms due to flashback. Pump put out of service.	Conical filter cleaned and liquid fuel improvements from the fleet are being applied to Saltillo.	None

Plant	Date of Incident	Summary of Incident	Corrective Actions Taken	Outstanding Items
Saltillo	May 5, 2022	False alarm plant trip by 87G protection activation of combustion turbine generator	Review of current differential protection relay information	MOC to evaluate creating approved change of CT generator protection relay every 15 years considering failure experience of relay and those of Rio Bravo. Perform OTM for 3420 relay replacement. Create procedure/instruction to develop analysis process for activation of electrical protections
Saltillo	April 22, 2023	Gas leak in gas turbine manifold due to high vibrations in turbine. Cause of failures in manifold due to interaction of hot gases with male inlets of manifold at low loads	Gas turbine manifold replacement (with design that has less contact area between exhaust gases with male inlet ducts).	Evaluate replacement of manifold by an improved design that presents smaller impact than gas with male inputs. Estimated date to perform evaluation for replacement: 09-30-2023
Rio Bravo IV	May 7, 2023	Unit stop due to water leakage in medium pressure economizer boiler. Possible thermal fatigue of tube due to temperature changes (thermal shock due to incidence in tubes, internal boiler insulation with deformations that allow passage of hot gases, etc.)	Inspection and repair of leaks in boiler	Ensure replacement of AP and MP steamer tubes that were previously closed Develop plan of NDT and destructive tests to AP and MP economizers (including magnetic particles, measurement of hardness at 100% thickness of tubes) Check deformed north side walls for correct insulation or repair in its defect Include revision in boiler section where ribs are located to check they are in good condition and free of cracking/deformations These activities will be performed during the November 2023 scheduled outage.
Rio Bravo IV	March 18, 2023	Gas turbine trip due to failure in electric generator. Short winding of phase A generator to ground	Electrical inspections	Root cause to be determined by NEC and INEEL investigations still pending (03-27-23)

Plant	Date of Incident	Summary of Incident	Corrective Actions Taken	Outstanding Items
Rio Bravo IV	October 2, 2022	Stop due to increase in temperatures of exhaust unit. False contact in electronic terminals inside exhaust tear. Damage in instrumentation wiring by heat radiation within tear due to leakage of hot gases	Exhaust temperature review safe unit shutdown and forced unit cooling preparations exhaust inspection and repairs	Acquire purchase and replacement service of exhaust cylinder
Rio Bravo IV	June 25, 2023	Gas turbine firing by position deviation against demand of pilot gas valve. Event in the national electricity grid. Likely adjustment/lack of tuning of output card (RSR display)	Standardized AVR and electrical equipment in plant	Request service from Emerson for tuning output card (RSR) to vale U1 gas pilot Scheduled date: 10-31-2023
Rio Bravo IV	November 2, 2022	Firing of gas turbine by high vibration of exhaust because of leakage of hot gases into tear drop. Cracks in exhaust plate caused hot gases to leak into teardrop and burned vibration instrumentation wiring causing variations and failures in measurement	Inspection and/or repair of U1 exhaust and teardrop instrumentation wiring	None.
Rio Bravo IV	January 15, 2022	Gas turbine firing by reverse power due to OST valve closure pilots. Caused by possible human error when moving terminal screw A2 of relay that activates OST valve pilots	Pilot OST valve order output relay changed	Evaluate changing current screw relays to relays with screw spring connectors
Rio Bravo IV	November 24, 2021	Firing of gas turbine by activation of fire protection system of exhaust tunnel. Caused by failed TG exhaust cone heat detector failure	Exhaust repair with plate and screws with steel nuts Review of wiring and sensors of fire system inside teardrop of gas turbine exhaust	Send metallographic analysis of piece of metal detached to determine source of failure
Rio Bravo IV	February 25, 2023	Start-up delay because boroscopy in compressor indicated part out of place (loose/lost)	Compressor opened to be inspected	Request ACR and quality plan during biweekly meetings with Mitsubishi to prevent compressor issue from reoccurring. Scheduled date: 12-31-2023

Plant	Date of Incident	Summary of Incident	Corrective Actions Taken	Outstanding Items
Rio Bravo IV	7/8/2023	Unit 1 shutdown to take corrective action to repair tube leaks on the HP economizer. Issues related to casing warpage leading to gas bypassing and local overheating	Tube failure repaired and panel warpage corrected to avoid further gas bypassing	Monitor and repair during planned outages.
Rio Bravo III	8/28/2023	Unit 1 shutdown to take corrective action to repair tube leaks on the HP economizer. Issues related to casing warpage leading to gas bypassing and local overheating	Tube failure repaired and panel warpage corrected to avoid further gas bypassing	Monitor and repair during planned outages.
Rio Bravo II	9/12/2023	Unit shutdown to take corrective action and repair to the Unit 1 HRSG Reheater	Tube failure repaired and the unit was returned to service	Monitor and repair during planned outages.
Rio Bravo II	9/14/2023	Unit shutdown to take correction action to repair Unit 2 HRSG casing and duct burner runner. Issue attributed to casing warpage leading to gas bypassing and local over heating of casing.	Casing repaired and duct burner runner returned to normal location.	Monitor and repair during planned outages.
Rio Bravo IV	9/22/2023	Unit 1 shutdown to take corrective action to repair tube leaks on the HP economizer. Issues related to casing warpage leading to gas bypassing and local overheating	Tube failure repaired and panel warpage corrected to avoid further gas bypassing	Monitor and repair during planned outages.
Rio Bravo II	10/25/2023	Unit shutdown to take corrective action repair a tube leak on the Unit 1 HP Superheater. Leak is attributed to routine wear due to cycling of the unit.	Tube failure repaired and the unit was returned to service	Monitor and repair during planned outages.
Saltillo	10/30/2023	Unit tripped to the 87G relay operation.	Troubleshooting identified a failed Beckwith 3420 relay that had been in service for 22 years. Relay was replaced with new equivalent relay.	Relays with more the 15 years of operating service will be replaced during routine outages to avoid future failures of this type.

Plant	Date of Incident	Summary of Incident	Corrective Actions Taken	Outstanding Items
Altamira II	8/3/2023	Unit 1 and 2 shutdown to take corrective action to repair tube leak on the HP Evaporators. Leakage attributed to under-deposit corrosion.	Tubes were repaired and owner has addressed issues in the water chemistry control for the unit.	Continue to monitor and address findings during routine outages.
Altamira II	8/28/2023	Unit 2 shutdown to take corrective action to repair tube leak on the HP Evaporators. Leakage attributed to under-deposit corrosion.	Tubes were repaired and owner has addressed issues in the water chemistry control for the unit.	Continue to monitor and address findings during routine outages.
Altamira II	10/2/2023	Unit 2 shutdown to take corrective action on a CT exhaust leak allowing hot gases to enter the outer casing and affect Disk Cavity temperature control.	Exhaust crack was repaired and the unit returned to service. We treatment process was improved by MHI to improve longevity of the repair.	Continue to monitor and address findings during routine outages.