Distributed Energy Resources Policy

September 2023

Contents

1. DEFINITIONS

In this Policy, unless the context otherwise requires, the following capitalized words shall have the following meanings:

i. "**BUYER**": Off-taker or purchaser of electrical energy from the IPP's power plant.

ii. "**COMMISSIONING**": The conduct of tests necessary to put a Unit or the Plant (as the case may be) into operation and supply to the grid;

iii. "**COMMERCIAL OPERATION DATE**": The date on which the developed power plant commences the operation of supplying electricity to the grid;

iv. **"CONNECTION POINT"**: The point of common coupling at which the units sent out from the Seller's Plant (Net Electrical Output) is delivered into Buyer's system;

v. **"DER"**: Abbreviation for Distributed Energy Resources

vi. **"ENSL"**. Electricity Network Services Licensee

vii. **"GENERATION LICENCE"**: A licence issued to the consumer self - supply to generate electricity for own use

viii. "**INDEPENDENT POWER PRODUCER** (IPP)": Seller of electrical energy to the off-taker.

ix. **"INTERCONNECTION AGREEMENT":** The agreement between the Community group, individual households or customers and the Off-taker for the sale and purchase of energy.

x. "**MW**": Abbreviation for megawatt being one thousand (1,000) kW;

xi. "**OFF-TAKER**": Electric Power Corporation

xii. "**OOTR**": Abbreviation for Office of the Regulator

xiii. "**NDC**": Abbreviation for Nationally Determined Contribution

xiv. "**PLANT**": The Seller's electrical energy generating power plant.

xv. "**POWER PURCHASE AGREEMENT**" or "PPA": The agreement between the Investor or Independent Power Producer ("IPP") and the Off-taker for the supply of energy to be supplied from the Investor's Plant;

xvi. "**PSEP**": Power System Expansion Plan

xvii. "**RES**": Abbreviation for Renewable Energy Source

xviii. "**SELLER**": Producer of electrical energy to sell to off-taker

2. INTRODUCTION

i) The Policy Framework

1. The Government of Samoa recognizes that Renewable Energy Sources ("RES") in particular Distributed Energy Resources ("DER"), which include wind, biomass, hydro, solar and municipal waste energy, have potential to generate income and employment, over and above contributing to the electricity supply and diversification of generation sources.

2. Strong policy support for RES is set out in Samoa's Nationally Determined Contribution (NDC) target under the United Nations Framework Convention on Climate Change (UNFCCC), which is to reduce greenhouse gas (GHG) emissions through the adoption of 70% renewable use towards 2031.

3. Consistent with this NDC target, a key objective of the Pathway for the Development of Samoa 2021/2022 to 2025/2026 is that of ***Key Strategic Outcome 4: Secured Environment and Climate Change, Key Priority Area 18: "Sustainable Energy Development Enhanced".*** Over this period, an increased number of RES projects are to be implemented through partnerships between the customers/ individual households, community groups and government.

4. Similarly, the **Samoa Energy Sector Plan 2022/2023-2026/2027** provides a strong emphasis on enhancing sustainability and affordability for all, and includes reducing reliance on imported fossil fuels, and providing an enabling environment for the development of grid connected RES projects as two key issues to be addressed over the 5-year period.

5. This Policy focuses on two forms of consumer self-supply grid connected DER:

    1. Cases where **community groups or other stakeholders as layout in section 7 below that** wish to develop a facility connected for their own use and to sell excess electricity to the Electricity Network Service Licensee; and
    2. Cases where **customers or individual households** wish to install RES on their own property, primarily for their own usage, but with any excess electricity supplied to the grid, and any shortfall made up by purchases from the Electricity Network Service Licensee.

6. For private IPPs of up to 5MW or more, Office of the Regulator's ("OOTR") **"Feed-in Tariffs Policy**" of 25 April 2017 still applies. However, updates in the policy and legislative framework reflected in this document are equally applicable for RES developed by Independent Power Producers (IPPs).

7. The policy addresses the integration of solar energy across various types of establishments, categorized on the scale, purpose, and energy needs. Using the ENSL's grid code and adopted AS/NZS standards, this policy acknowledges the following categories for a consumer self-supplier:

7.1 **Residential Establishments (Individual)**

- **Definition:** Single-family homes, townhouses, apartments, and other residential dwellings.
- **Installed Capacity Range:** 1kW to 10kW

7.2 **Small Commercial Establishments (Stakeholders)**

- **Definition:** Small businesses, retail shops, cafes, and offices with low to moderate energy consumption.
- **Installed Capacity Range:** 10kW to 100kW

7.3 **Medium-Scale Commercial and Industrial Establishments (Stakeholders)**

- **Definition:** Medium-sized factories, warehouses, shopping centers, and office complexes.
- **Installed Capacity Range:** 100kW to 1MW

7.4 **Large-Scale Commercial and Industrial Establishments (Stakeholders)**

- **Definition:** Large factories, data centers, industrial parks, and major commercial hubs.
- **Installed Capacity Range:** 1MW to 10MW

7.5 **Community Solar Projects**

- **Definition:** Shared solar installations for community housing, schools, or local government facilities.
- **Installed Capacity Range:** 10kW to 1MW

7.6 **Government and Public Institutions (Stakeholders)**

- **Definition:** Schools, hospitals, government buildings, and public infrastructure.
- **Installed Capacity Range:** 10kW to 5MW

7.7 **Agricultural and Rural Establishments (Community Groups)**

- **Definition:** Farms, agricultural facilities, and remote rural properties.
- **Installed Capacity Range:** 5kW to 500kW

7.8 **Microgrids and Off-grid Systems**

- **Definition:** Localized grids for remote or islanded areas.
- **Installed Capacity Range:** 10kW to 100kW

7.9 **Emerging and Innovative Solar Applications**

- **Definition:** Solar carports, floating solar, and building-integrated photovoltaics (BIPV).
- **Installed Capacity Range:** 1kW to 1MW+

ii) The Legislative Framework

8. Section 58(2)(c)(iii) Energy Management Act 2020 states that upon receipt of a proposal for a RES project, the Energy Division of the Ministry of Works, Transport and Infrastructure (MWTI) must forward the proposal to the appropriate Government entity or entities who must perform a comprehensive review of the proposal to ensure compliance, including with:

    (i) Licensing requirements under the Energy Management Act 2020, the Electricity Act 2010 or any other relevant Act,
    (ii) Procedures or approval processes for entering into a Power Purchase Agreement (PPA) under the Electricity Act 2010.

9. For all projects developed by groups as mentioned in part 7, section 30 (1) of the Electricity Act 2010 requires the Electricity Network Service Licensee (ENSL) to seek the Regulator's approval before entering into an Interconnection Agreement. Moreover, subsection (2) allows for the Regulator to approve an application for an Interconnection Agreement where it is of the opinion that the purchased power is at least cost, and that the contract is consistent with the Electricity Network Services Licensee's approved Power System Expansion Plan (PSEP). The Electricity Act 2010 does not make a distinction by ownership of an IPP, defining it as "**a generator of electricity for sale to the ENSL that is not owned by the ENSL**". However, as schemes proposed by Community Groups are typically small (below 1MW), and for which business structures are not in place, separate treatment is warranted in the assessment of an application for a Power Purchase Agreement and Generation license.

10. There is no express provision in the Electricity Act 2010 relating to the installation of RES by a customer at its premises. However, many of the Objectives under section 3 of the Act are supportive of this aim including:
    a) to promote competition in the generation of electricity,
    b) to promote the use of renewable energy sources via new technology by service licensees to generate, transmit or supply electricity,

c) to promote the prevailing national energy policies; and
d) to promote the prevailing national policies on combating climate change.

11. The Energy Management Act 2020 is designed to promote sustainable energy management, enhance energy efficiency, and support the transition to renewable energy sources in Samoa. The Energy Management Act 2020 outlines a structured process for approving renewable energy establishments to ensure that projects align with national energy goals, grid stability requirements, and environmental standards.

iii) Objectives of this Policy

12. The objectives of this policy are to:

1. Outline procedures and approval processes for **an Interconnection Agreement** for distributed renewable energy establishments required by the Regulator under the Electricity Act 2010 and referenced in the Energy Management Act 2020.
2. Provide guidance to community groups, individuals, and other categories layout in section (7) and the ENSL regarding the approach to be taken by the Regulator in assessing tariffs for DER connected to the electricity network.
3. Facilitate resource mobilization by enhancing investment security and market stability for investors in electricity generation from RES;
4. Reduce transaction and administrative costs and delays associated with the conventional procurement processes;
5. Promote Government policy aims.
6. Ensure that new generation capacity is committed in the sequence and at the date, that provides the least cost to the economy of Samoa as a whole.
7. Maintain the reliability, security and stability of the grid, and enhance these where it is efficient to do so.

3. POLICY FOR APPROVAL OF INTERCONNECTION AGREEMENTs FOR COMMUNITYGROUPS AND OTHER STAKEHOLEDRS

iv) Introductory Issues

13. This policy is designed to apply primarily in the case of unsolicited proposals made by Community Groups and other categories as stated in this policy to the **National Energy Coordinating Committee** (NECC) through Energy Division of the MWTI and the Electricity Network Services Licensee.

14. Pursuant to Government's policy strategies, the legislative requirements and in recognition of the potential of DER in Samoa, the OOTR encourages:

    1. Community Groups and other similar consumer self-supplier to carry out feasibility studies on RES generation based on Interconnection Agreement to be negotiated with EPC.
    2. Potential IPPs (explicit prospective) to also consider and carry out feasibility studies to complement targets in the current PSEP with the Electricity Network Service Licensee to make sure they avoid unnecessary expenditures by setting out to study options that are obviously inappropriate for grid connection.

15. For grid connected RES generators of up to 5 megawatts (5MW) or more, OOTR supports the development of standard Power Purchase Agreement (PPA) contract by the ENSL to promote certainty to investors and funders in RES projects. Technology specific sections and case-by-case deviations are appropriate, though any deviations should be kept to a minimum and justified where necessary. The selected technology is preferred to provide base load capacity not intermittent technology for stability of the Grid.

16. Under the Electricity Network Services Licence, the **ENSL must developed a Grid Code such as EPC Grid Code,** which ensures the safe, reliable, and efficient operation of Samoa's electricity grid. It governs the interaction between the ENSL, independent power producers (IPPs), and other stakeholders.

    - Applies to all grid-connected generators, transmission, and distribution systems.
    - Covers technical requirements for equipment, connection standards, and operational procedures.
    - All grid users must comply with the EPC Grid Code.
    - The ENSL monitors compliance and may enforce penalties for violations.
    - The ENSL Grid Code is periodically reviewed and updated to reflect technological advancements, changes in energy policy, and evolving grid needs.

v) Preliminary Approval Issues

17. The Applicant and/or the ENSL as appropriate, must be able to demonstrate to OOTR, where requested, the presence of agreements and other analysis that is complementary to the Application. These include, but are not restricted to:

1. An **Interconnection Agreement** allowing for the Applicant to access the network of the ENSL together with agreement on any applicable network upgrades and the conditions that must be met by the applicant.
2. Land leasing agreement(s).
3. All necessary permits obtained by the Applicant, environmental assessments and other regulatory requirements.
4. A positive assessment by the ENSL on the financial solvency of the Applicant and/or its proposal.
5. ENSL conditions for interconnection to network to be met

vi) Power System Expansion Plan

18. The PSEP is produced by the ENSL, with an objective of delivering a sustainable, reliable, and more renewable energy system that:

    1. Identify least-cost development options that reliably meet prudent forecast electricity demand scenarios for a period of up to 10 years;

    2. In accordance with prevailing policy, support increasing levels of RES in the generation mix where this can be achieved without unduly compromising the security, reliability, efficiency, and quality of electricity supply; and

    3. The PSEP should develop cost-effective measures that support least-cost new supply and improve the efficiency of the power system without creating technical and commercial problems for the electricity network. The plan should estimate the cost of feasible scenarios for Samoa to expand the share of RES via the ENSL to meet prevailing government policies.

    4. Be approved by the Regulator

19. The proposed **Interconnection Agreement** must;

    1. Fulfil an electricity capacity and/or grid stability support need identified in the current Power System Expansion Plan; and
    2. Be consistent with the requirements for interconnection to the electricity grid as set out in the Grid Code.

20. In ensuring consistency with the PSEP, the Regulator's review will consider, but not be restricted to:

    1. Whether the proposed project is explicitly identified in the Plan.

2. The proposed technology in the Interconnection Agreement, and those underpinning the capacity expansion in the Plan.
3. The costs proposed in the Interconnection Agreement and those of the Plan,
4. The timing of the facility to be constructed by the Applicant, generation plants being constructed by other participants, and others developments specified in the Plan.
5. Any major changes since the publication of the Power System Expansion Plan that may affect the results therein.

vii) Least Cost Development

21. The Regulator is required to ensure, under Section 30(2) of the Electricity Act 2010 that the proposed Interconnection Agreement results in electricity being purchased at least cost, such costs to include the full incremental costs of network connection reasonably identified by the ENSL, or, taking into account any extra costs to address technical problems caused by interconnection to network.

22. Consistency with the PSEP is an important consideration, which will be supplemented by:

    1. A cost-based evaluation of the proposed Interconnection Agreement price path.
    2. An evaluation of the proposed prices against current customer tariffs.
    3. The full incremental costs of network connection reasonably identified by the ENSL.

23. An evaluation of the proposed Interconnection Agreement prices against current energy-related charges will consider:

    1. The immediate impact of the project on customer tariffs.
    2. The impact of the project on the customer tariffs against the scenario of no-project. Technical and Commercial Impacts on Network Service Provider
    3. The full incremental costs of network connection reasonably identify by the ENSL.
    4. Local taxes requirements e.g. VAGST, duty, VAGST at point of sale, withholding tax, local and overseas investors.

viii) Notification of Findings

24. The Regulator will take a period of no more than 2 months to undertake its assessment of the proposed Interconnection Agreement, and will notify the applicant and the ENSL in writing of its findings.

ix) Licensing

25. While awaiting approval of the proposed Interconnection Agreement, the Applicant must apply to OOTR for a generation licence. A valid generation licence needs to be held over the lifetime of the project.

26. Details on the process of applying for a Generation Licence are provided in the Licensing Criteria available on both Office of the Regulator's website and also the ENSL website.

x) Project Commissioning

27. The tariffs under the Interconnection Agreement are subject to Regulator' approval shall apply for the term of the Interconnection Agreement from the latter of:
    1. The commercial operation date.
    2. The date the Generation Licence is granted.

4. POLICY FOR THE INSTALLATION OF DER AT A CUSTOMER (INDIVIDUAL) PREMISES

xi) Introductory Issues

This policy is designed to be applied in cases where customers desire to install a DER facility on their premises while remaining connected to the EPC network. While the policy broadly encompasses all forms of RES such as rooftop solar PV, it is not limited to this technology alone. Other options, such as biomass-based projects or any other distributed renewable energy sources available in Samoa, are also considered. It is important to refer to the EPC Grid Code for the list of approved distributed renewable energy sources.

28. Pursuant to Government's policy strategies and technical requirements, the OOTR encourages customers considering installing a DER system to carry out its own feasibility assessment prior to purchase any equipment or supplies.

29. The proposed size of the facility must be consistent with current and forecasted electricity usage to support self-consumption as opposed to undue export to the grid.

xii) Technical Requirements

30. As required under the Electricity Network Services Licence, the Electricity Network Services Licensee is to develop a Grid Code, which will include technical requirements to all customers on the connection and operation of DER generation on their premises that will be connected to the electricity distribution or transmission grid. These requirements may vary depending on the size of installation and by technology.

31. These small-scale DER project requirements are layout in specific section(s) of the Grid Code by the ENSL.

xiii) Application Process

32. The Electricity Network Services Licensee will develop a clear and simple application process for customers wishing to install RES on their premises. These procedures will be published on its website and include timeframes for each step.

33. The ENSL will develop an **Interconnection Agreement** for signing with the customer. The Agreement will be consistent with relevant provisions of the Grid Code and the agreed charging arrangements, and specify at a minimum, arrangements for:

    a) Facility standards,
    b) Charges, settlement and billing,
    c) Representation and Warranties,
    d) Connection and Disconnection,
    e) Access to the Facility,
    f) Force Majeure, and
    g) Dispute Resolution.
    h) Penalty fees
    i) Technical constraints

xiv) Payment arrangements - Net billing

34. The customer will be subject to a system of net billing for electricity produced and consumed. Under these arrangements:

    1. The customer is free to use electricity produced on its premises for personal consumption, without payment for the energy volumes to the ENSL. This aligns with the concept of net metering, where the consumer offsets their electricity consumption with the electricity generated by their renewable energy system.

2. Surplus electricity volumes exported to the grid and recorded in the export register of a suitable metering system will be deemed to be sold to the EPC. This reflects the net billing aspect, where excess electricity exported to the grid is credited to the consumer at a rate based on the prevailing avoided cost of generation, determined in accordance with the prevailing tariff determination approved by the Regulator.

3. Electricity volumes imported from the grid and recorded in the import register of a suitable metering system will be deemed to be purchased from the EPC. This mirrors the net billing process, where electricity imported from the grid is charged to the consumer at the prevailing retail (consumption) rate for the appropriate customer category, determined in accordance with the prevailing tariff determination and approved by the Regulator.

35. The Avoided Cost of Generation is designed to reflect the true value of the surplus electricity generated and supplied to the Electricity Network Services Licensee. In the first instance, the Avoided Cost of Generation will be set at 50% of the average Energy Charge annual rate. A rate lower than the average energy charge is designed to ensure that the net impact of customer generation is to provide a downward pressure on the energy price. The Regulator will periodically review the Avoided Cost of Generation based on developments in the cost and components of energy.

36. The ENSL is entitled to levy a fixed monthly charge to recover meter reading, billing, and similar costs that are directly imposed on its operations by the customer RES facility and are additional to those costs incurred under normal connection. The levy of this charge requires the approval of the Regulator under section 19 of the Electricity Act 2010.

xv) Licensing requirements

37. Under Section 13(1) of the Electricity Act 2010 "A person wishing to generate electricity other than for their own use or to provide electricity network services must apply in writing to the Regulator for a license to do so". Thus, for any customer-based connection; the applicant must lodge its generation license application together with an **Interconnection Agreement** between the customer and the ENSL for approval by the Regulator.

38. Applications for generating electricity should be directed to ENSL initially, and generation licenses should be submitted to the Regulator for approval.

39. Details on the process of applying for a Generation Licence for a consumer self-supply is available on OOTR's website www.regulator.gov.ws .

REFERENCES

1 Electricity Act 2010 https://regulator.gov.ws/images/Act/Electricity-Act--2010.pdf

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