Project lifecycle management & end of life guide

1.1 Introduction

Scatec is committed to being a responsible business and has therefore set ambitious environmental & climate targets including reaching net zero emissions across our value chain by 2040. As most of our greenhouse gas and resource footprint is related to the components our plants are built with, it is essential that we make informed decisions to reduce this impact where possible.

Furthermore, our solar & wind power plants often have Power Purchase Agreements (PPAs) that last 10-25 years and may have the potential to operate beyond the PPA expiration. Our power plants must therefore be designed and operated with consideration to their long-term performance and eventual decommissioning, to minimize potential negative impacts upon society & the environment and maximize economic value.

1.2 Purpose & Scope

This document is a high level guide to ensure best practice and support decision making throughout the power plant lifecycle, in accordance with relevant standards such as the Equator Principles and IFC Performance Standards. This should be used alongside other Scatec procedures and operating systems.

This document is relevant for all Scatec owned and/or operated power plants during the construction, operation, and decommissioning phases.

2 Lifecycle considerations by project phase

2.1 Phases 0 to 1.5 – Screening, opportunity and feasibility

2.1.1 Site selection and assessment

- **Site selection**- sites should, when possible, avoid areas of high social and environmental risk. For example, avoiding forests or areas of high biodiversity is not only beneficial for nature, but will reduce the cost of restoration at site end of life by reducing the effort needed to restore the site to its initial state. Our approach is detailed in our ESMS manual and is assisted by tools such as the Internal E&S screening tool.

- **Due diligence and impact assessments**- project environmental and social due diligences and impact assessments must consider alternatives and cumulative impacts as per IFC PSs risk assessment requirements that reduce potential negative impacts.

2.2 Phase 2 - Structuring

2.2.1 Sourcing

- **Quality components**- During procurement High quality components aligned with the power plant's site requirements (including climate change risks) should be procured possessing market standard warranty durations and terms and in accordance with the Supplier Qualification and Due Diligence Procedure.
- **Obsolescence risk**- should be considered during procurement and PPA contract signing. This should ensure that spare parts from suppliers are either procured early in the project or are available throughout power plant lifetime, or that agreements allow for replacement with suitable alternatives if the original component is no longer available.
- **Take-back schemes**- If take-back schemes in case of component damage/ failure or at plant decommissioning are available with component manufacturers, it should be considered to enter into an agreement such as an MoU or equivalent. This should be a priority for wind turbine blades due to end-of-life recycling challenges.

2.2.2 Design & financing

- **Light footprint**- the plant design should where possible follow the natural topography and minimise groundworks such as soil movement and concrete foundations. The lifecycle management tool should be used during the power plant design phase to minimize negative environmental impacts alongside 3rd party environmental assessments. Reducing damage to soils through compression or soil movement will for example reduce greenhouse gas emissions, erosion risks during operations and site restoration costs at decommissioning.
- **Flexibility in PPA contract** ensuring where possible considerations for lifetime extension and repowering are included as options in the contractual requirements once the PPA has expired.
- **Disassembly**- Where possible components and parts should be simple to dissemble at end of life and should be free from harmful materials to allow easy transport and safe recycling.
- **Decommissioning plan-** a plan for disassembly of the plant and disposal of all components should be prepared in accordance with relevant local and international standards of how the site shall be restored to its original state. The lifecycle management tool can be used to inform this process.
- **Decommissioning funds** e.g., from project revenues, should be set aside in good time and included in project financial model to cover costs at end of life to restore the site to original or better environmental state.

2.3 Phases 3 & 4 - Construction & operation phases

- Follow guidance and act on lessons learnt during construction to minimize accidental panel damage.

- Facilities and associated components should be maintained in accordance with manufacturers guidance and the Equipment Reliability Process to ensure that useful lifetime is maximized, and component damage is avoided
- In case of component malfunction or damage, the Waste Management Procedure should be followed which is based upon the waste-hierarchy:
    - Re-use- if it is possible, safe and responsible, repair and re-use components, e.g. refurbish solar panels for second life applications.
    - Recycling- if components cannot be re-used or there is a lack of suitable off-takers the components should be recycled. Companies recycling components should be suitably certified and qualified and there should be a clear chain of custody from collection to final treatment.
    - Components should not be landfilled unless all other options have been explored and there is no other safe way of disposing of the components.
- Damaged component should be monitored and stored in a safe environment prior to disposal (see waste management procedure for more details).

2.4 Year 10 onwards- lifetime extension or repowering assessment(s)

- **Decommissioning plan review-** The initial decommissioning plan should be reviewed and updated if there has been site or other significant changes
- **Safety & viability assessment**- as the plant ages and towards the end of the PPA period a thorough assessment of the power plant state should be conducted to assess:
    - the condition and safety of key components
    - whether they could safely and economically operate beyond the PPA period
- **Plant operating life extension**- should be explored if the plant and components are still functioning at an acceptable level in terms of no significant HSSE risks, industry standard plant availability and is financially viable (with support from additional legal, financial and technical resources as necessary)
- **Re-powering-** if a plant is not viable to continue its present state, repowering by upgrading or re-developing the site with modern technology should also be considered.

2.5 2-3 years before agreed decommissioning date- final decommissioning plan

- The initial decommissioning plan should be updated, and contracts agreed with partners who can responsibly repurpose or dispose of large volumes of used components in a traceable manner following the waste hierarchy (as described previously).

2.6 Related documents and processes

Policies: Procurement policy, Environmental Policy Statement, Sustainability Policy, Quality Policy

Other documents

- Internal E&S screening tool
- Supplier Qualification and Due Diligence Procedure

- Lifecycle management tool
- Lessons learnt database
- Equipment reliability process
- Waste Management Procedure
- Environmental and Social Management System (ESMS) Manual

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