

PROJECT DEVELOPMENT PROCESS

MacIntyre Wind Farm. Image Courtesy: ACCIONA Energía.

Project Development Process

This section provides an overview of the feasibility and development process.

Developers follow a staged development process and invest gradually in site planning and investigation as they gather more information on sites and reduce risks.

The stages will vary according to the site, the technology, and the developer so this Toolkit provides a general process based on discussions with a number of developers.

The development process is a staged investment approach to manage development risks incrementally with a series of

major reviews that the developer may have at key parts of the investigations such as the receipt of a major consultant report or response from a government assessment agency.

Accordingly, the level of detail a developer has will increase as the project develops. The developer may not have a high level of detail about the project at the time they approach you.

The overall project development phases are shown at Figure 4 and the level of detail about the project is shown in Table 2.

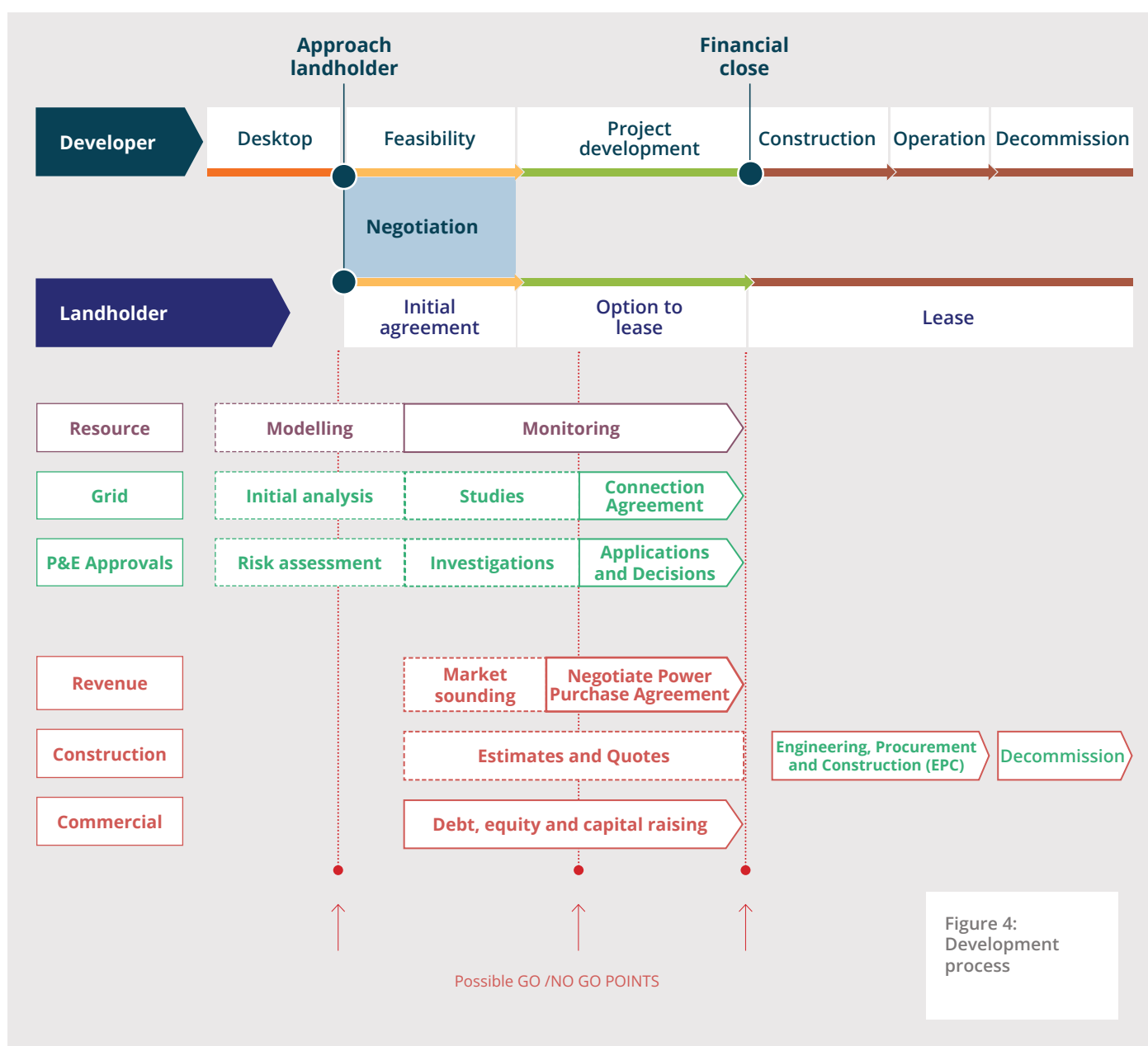


Figure 4:
Development
process

There are a number of lines of investigation that occur simultaneously to understand any factors that may impact the planning and design of a project. At all stages, the developer is undertaking a number of work packages within each of the disciplines as indicated in Table 3.

While these investigations are ongoing, there is a chance that information may be found that changes the scope of the project and may force the developer to reconsider the design or even viability of the project. These are major review points or go/no-go points as shown at Figure 4.

All of the investigations culminate in a financial analysis which will consider the project costs, risks, revenue and project finance. In seeking project finance, banks may request changes to agreements to ensure there is enough security and their interests are protected.

As such, until all investigations are completed, there is the potential for plans to change.

At the desktop assessment phase for example, the developer may produce an indicative layout of the project based on what is known about the site from research, GIS mapping and other similar assessments. These layouts are refined as more detailed studies are conducted to identify opportunities or risks, such as the suitability of the local network and the extent of any environmental constraints.

The developer will call for tenders for the construction of the project in one or more work packages. The work packages may include a “design and construct” component. This is where all the final detail of the project is approved and finalised, and it becomes very difficult and costly to make any further changes.

‘Micro-siting’ may also occur during the construction phase, where the location of infrastructure may be changed in response to site matters.

Table 2 Project Development Phases: Level of Detail

Desktop Pre-feasibility Project development Construction Operation Decommissioning			
Stage	Tasks	What stage is the project design at?	How much detail is available about the project?
Desktop	Information gathered from available online resources and research.	Concept	Very Low
Pre-feasibility	Preliminary investigations and Network Connection Inquiry. Social Impact Assessment	Indicative	Low – Medium
Project Development	Detailed investigations, Community Benefit Agreement, Development Applications, Federal Referral for Matters of National Environmental Significance (threatened biodiversity), Network Connection Agreements.	Advanced	High
Construction	Building the project.	Final (Though subject to change depending on conditions encountered during construction)	High – Very High
Operation	Project operates and generates power.	Finalised	Completed
Decommission	Decommission the project and make good the site in accordance with plans.	Final Decommissioning Plan with likely cost.	High



Kennedy Energy Park. Image Courtesy: Windlab.

State Development Assessment Provisions

The State Development Assessment Provisions include three state codes for renewable energy development including:

State Code 23: Wind farm development

State Code 26: Solar farm development

State Code 27: Battery storage facility development

The codes set the assessment benchmarks for how these developments manage impacts such as land use, environment, infrastructure, community amenity, decommissioning and neighbouring properties.

Together, they guide where these projects can be located and the standards they must meet to gain development approval.

During the feasibility stage, developers will need to obtain development approval for the project by preparing and submitting a development application to the relevant authority.

Utility-scale projects including wind farms, solar farms with an output capacity greater than 1MW and batteries with an output capacity greater than 50MW are subject to impact assessment and the assessment manager is the Queensland Government's State Assessment and Referral Agency. Solar farms less than 1MW are impact assessable by local government but not subject to the community benefit system.

The developer will need the landholder's written consent to the development application.

When projects are subject to impact assessment, it means that members of the public will have an opportunity to make submissions about the development. If the development application is approved, these submitters have the right to appeal the approval to the Planning and Environment Court. Appeals can seriously delay developments. You generally won't be a party in the court process, but the developer will be.

If the development application is approved, the development approval will attach to the land. The landholder, the landholder's successors in title, and any occupier of the premises and the developer are required to comply with any conditions that are included in a development approval. You can enter into an agreement with the developer to establish responsibilities for or secure the performance of development conditions.

Before providing consent to the development application, review a copy of the development application and make sure you understand what the developer is applying for and how the development is likely to impact the land. You should also consider asking the developer and assessment manager about what conditions are likely to be imposed on the development and how they are likely to impact the current use of the land.

For more information about project planning stages including Legislated planning requirements, refer to the [Planning and Development in Queensland](#) section of [Useful Resources](#).

Table 3: Project Development Process: Work Packages

Desktop assessment		Pre-feasibility		Project Development, or Approvals	Final Investment Decision or Financial Close	Construction	Operations	Decommission
Resources assessment	GIS	On site monitoring, site constraints	Detailed assessments, site constraints				Typical lifetime for renewable energy projects is as follows: Solar PV: 25-40 years Wind: 20-30 years Biomass Combined heat and Power: 20-30 years Hydropower: 40-80 years	Decommissioning in accordance with contract clauses and conditions of approval for decommissioning.
	Site selection							
Network Connection	GIS	Network connection enquiry	Market participant registration (AEMO)		Connection to the grid is approved by the network service provider	Network connection works to be completed by the developer or Network Service Provider		Usually the decommissioning and rehabilitation plan is set during initial stages of the project.
Planning and Environmental Approvals	Researching Network Planning Information.	Initial planning due diligence	Local and/or State Government consultations and pre-lodgements Risk assessment: Environmental studies such as biodiversity, native title, geotechnical Social Impact Assessment, Community Benefit Agreement	Lodge applications. Obtain development approvals and other approvals including Federal referral for matters under the Environmental Protection and Biodiversity Conservation Act	All the required approvals are in place			Clear responsibilities and plans for decommissioning phase incorporated.
Construction and operational costs	Conceptual capital and operational estimates	Estimates and Quotes	Tender process and contracts	Contracts in place for Construction with potentially some pre-construction works or procurement underway.	Engineering, Procurement and Construction (EPC) contractors on site for complex infrastructure projects following the site works and construction management and rehabilitation plans.			Is there provision in the contract for repowering?
Power Purchase Agreements (PPA) or Off-take agreement	General Industry figures	Initial Discussions with retailers	Agree terms of PPA	Off-take agreements between the energy producer and the buyer are in place				
Commercial			Integration of all above information to determine the overall viability of the project and recommend actions to the Board.	Agreements finalised by this stage. Economic estimates for the capital expenditure, production and generation meet the requirements of the lender, investor and developer.				

How long will the development process take?

The time it takes for the development phase will vary significantly depending on the technology and scale as well as the number of environmental and planning factors that need to be considered and mitigated.

As a result, it is difficult to provide a meaningful generic timeline. You should therefore ask the developer to give examples of how long the development process has taken them for similar projects on other sites.

Refer to the Australian Energy Infrastructure Commissioner website for examples of planning and development time frames.

Repowering or decommissioning

Toward the end of a renewable energy project lease, a developer will assess whether the site should be decommissioned, repowered, or have its operating life extended. This decision is influenced by factors such as the condition and performance of the existing infrastructure, remaining grid connection value, landholder relationships, planning approvals, technology improvements, electricity market conditions, and the economics of replacing older equipment with newer, more efficient systems.

In practice, developers may begin discussions with landholders and relevant stakeholders several years before the lease expiry date, because repowering or extending a project may require new commercial negotiations, planning approvals, financing, community engagement, and potentially updated environmental or grid studies.

The Queensland Government's planning reforms introduced further requirements for developers in relation to decommissioning of solar, wind and battery storage facility projects. These requirements are set out in the relevant codes (State Code 23: wind farm development; State Code 26: solar farm development; and State Code 27: battery storage facility development) and their associated guidelines.

These codes include performance outcomes for rehabilitating and ultimately decommissioning of sites which must be complied with by a project developer through the development application assessment process to achieve compliance with the code. Ultimately, responsibility for decommissioning sits with the project developer and a number of plans related to remediating impacts during and post construction as well as detailed decommissioning plans are required.

These codes require decommissioning plans to be secured by bonds or financial guarantees or other mechanisms to provide safeguards for both landowners and governments from a developer failing to meet its decommissioning obligations and a condition will be applied to a project's development approval to require the implementation of the proposed financial security arrangements.

A number of matters that may lead to a major review or a decision to cease work on a project are shown in [Table 4](#).

Table 4: Possible project REVIEW and GO / NO-GO points

Pre-feasibility

Initial contact with local council and/or the State Government indicates it is unlikely that the required approvals would be granted.

Unable to get landowner consent to access land.

Initial network inquiry indicates poor network strength or capacity.

Project development stages

Planning and environmental assessments identify significant issues that may require a change (i.e. sensitive areas, geotechnical assessment)

Unable to get required approvals: Development applications refused, or onerous conditions imposed.

Unavailable Network Connection

Unable to secure Power Purchase Agreements.

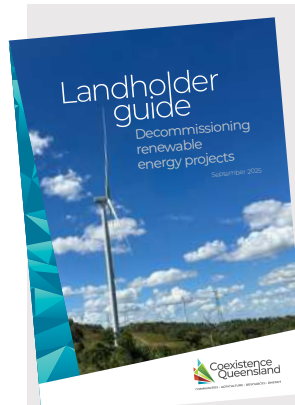
Combination of issues identified in project modelling indicating that the project is not techno-economically feasible including:

- a. constrained network
- b. insufficient solar, wind, water or available biomass resources
- c. capital constraints
- d. constraints in the supply chain.

FID or financial close

Board not supportive of project or prioritises another project.

Investors or financiers not satisfied that all risks are managed.



Landholder Guide: Decommissioning renewable energy projects

The guide provides information to assist landholders work with developer to plan ahead and negotiate fair decommissioning outcomes.