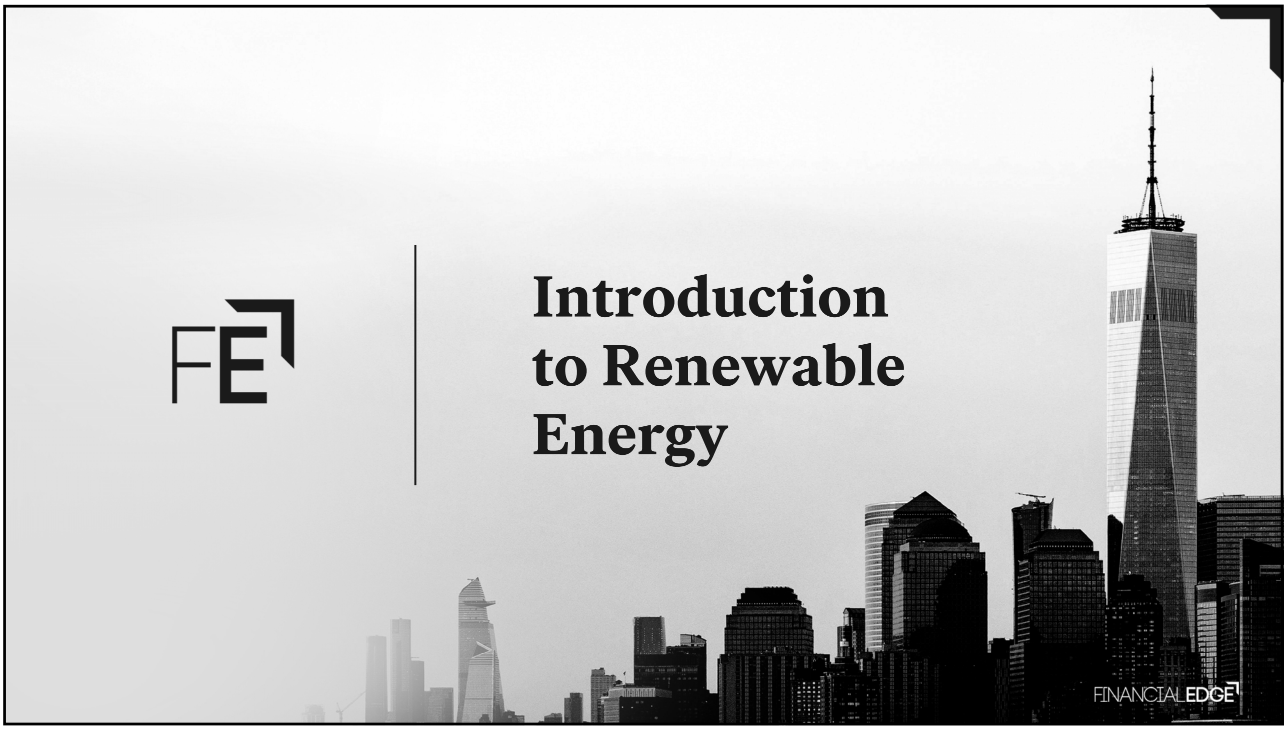
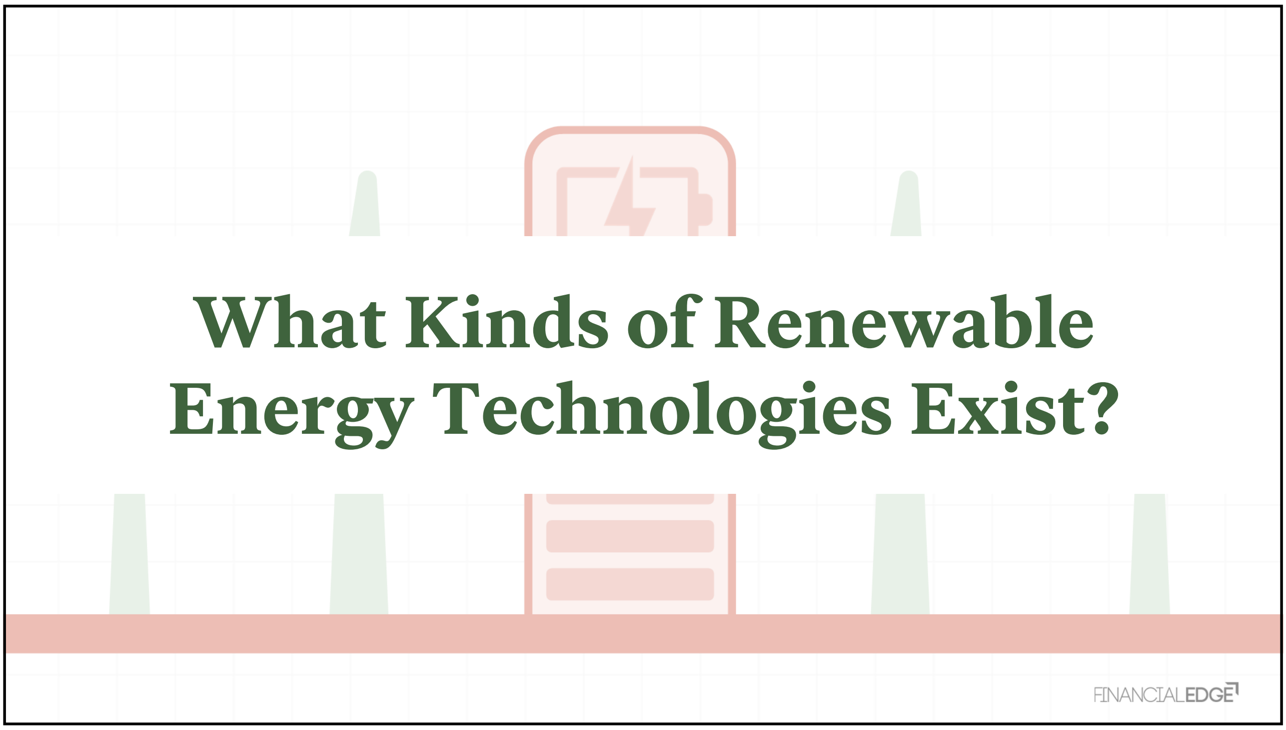
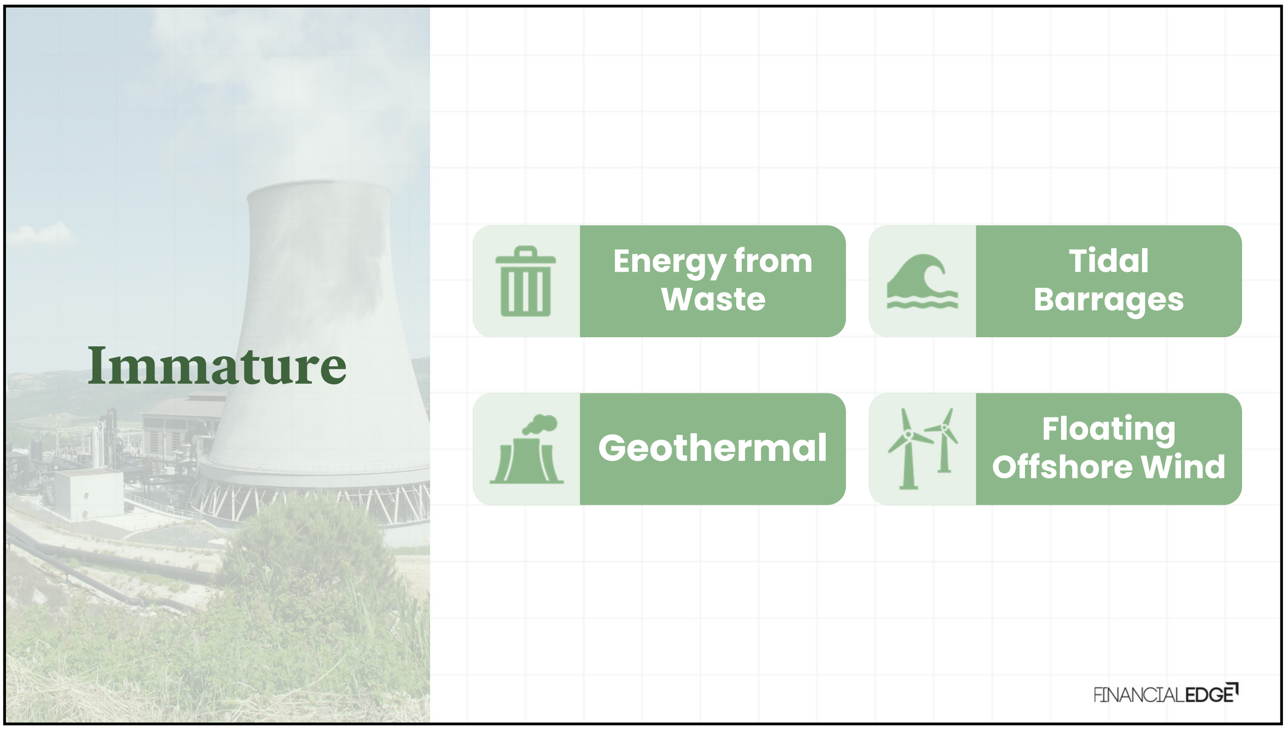

Introduction
to Renewable
Energy


What Kinds of Renewable
Energy Technologies Exist?

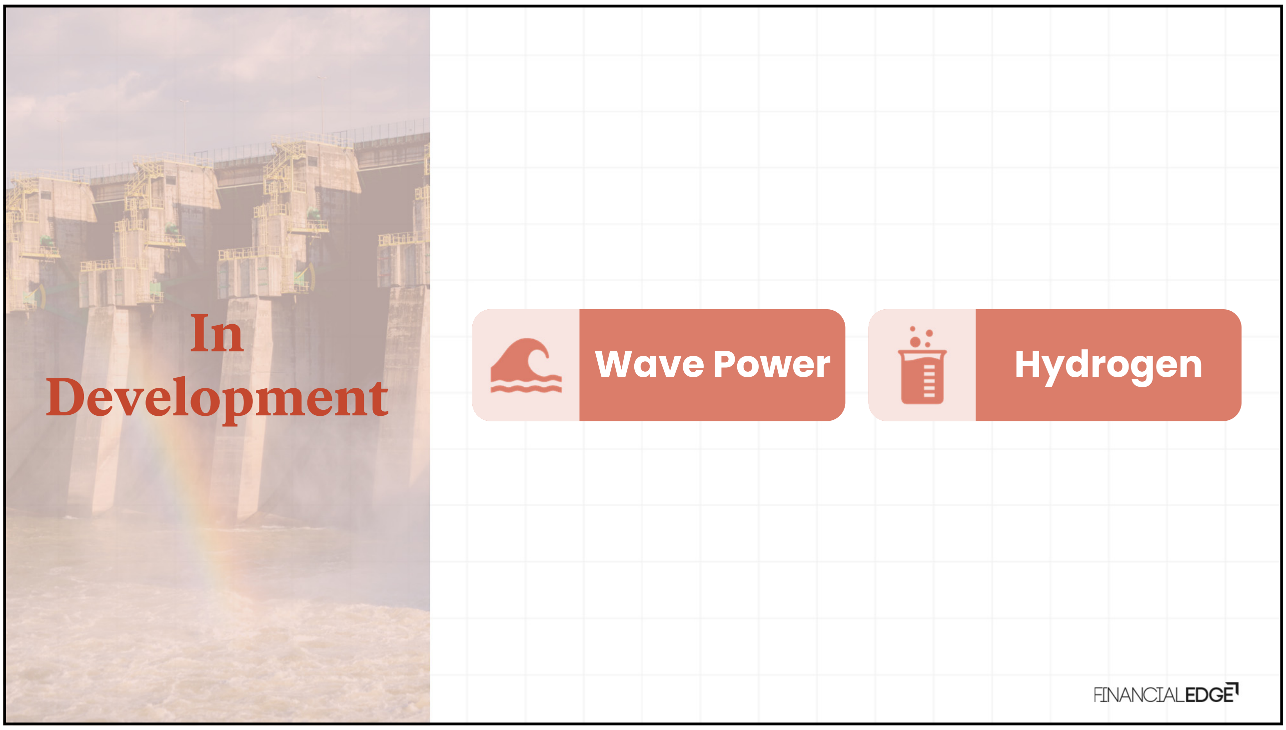

Mature
Immature
In Development
FINANCIALEDGE


Mature
Wind
Solar
Hydro
Biomass
Landfill Gas
FINANCIALEDGE


Mature
Immature
In Development
FINANCIALEDGE


Immature
Energy from Waste
Tidal Barrages
Geothermal
Floating Offshore Wind
FINANCIALEDGE


Mature
Immature
In Development
FINANCIALEDGE


In Development
Wave Power
Hydrogen
FINANCIALEDGE

Project Finance vs Renewable Energy Project:

What are the Similarities?

Investment

Investment happens upfront, **before any revenue is available**

Therefore, debt and equity finance are used (at risk) to **build the project assets** and then subsequently earn revenue from them

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Structure

Most projects occur in a standalone **Special Purpose Vehicle (SPV)**, set up solely for the purpose of **financing, building, owning and operating the project**

The SPV must be able to **service its own debt** - there are usually **no cross-guarantees** or **indemnities** from other parties

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Timeframe

Most projects take **considerable time to get organized**

There are **multiple parties**, all of whom need to **reach an agreement** before all the project documents are signed off (that point is called **financial close**)

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Long-term Nature

Projects are **long-term in nature** – many extend to **20 years of life or more**

This has substantial impacts on **revenue generation, cost certainty, financing and returns on investment**

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Lifecycle

There are **2 (or 3)** phases in the project's life

Construction, **operations** and (sometimes) **handover / de-commissioning**

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Project Finance vs Renewable Energy Project:

What are the Big Differences?

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Income Security

Lifecycle

Ramp-up

Policy Support

Cash Flow

Income Security

Lifecycle

Ramp-up

Policy Support

Cash Flow

Usually have **guaranteed revenue** before reaching financial close, in the form of a **Power Purchase Agreement (PPA)**

Income Security | **Lifecycle** | Ramp-up | Policy Support | Cash Flow

Typically in line with the PPA – the useable life of the assets **co-terminates with the PPA**. Usually assume no further revenue **after PPA expires**

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Income Security | Lifecycle | **Ramp-up** | Policy Support | Cash Flow

Whilst equipment won't be switched on 100% immediately, ramp-up happens **as fast as technical engineering issues allow**; it is **not restricted** by the availability of customers (that's agreed in advance under the PPA)

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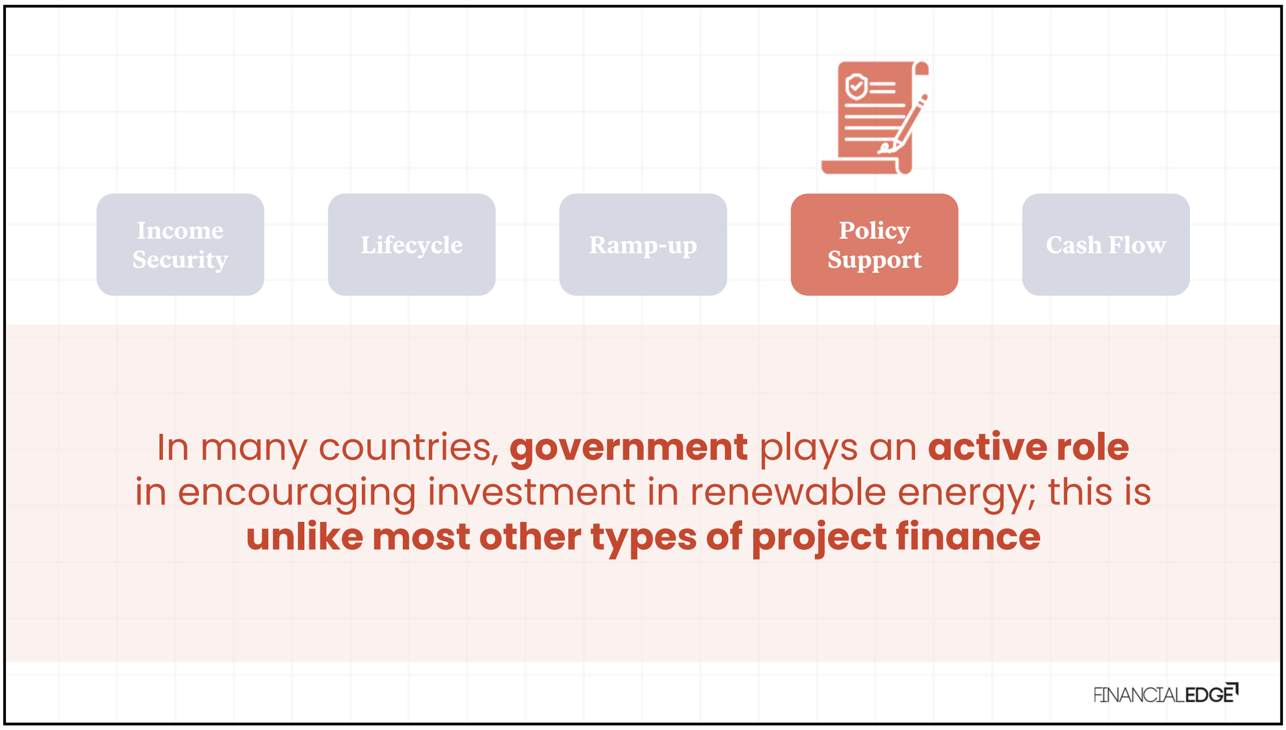
Income Security
Lifecycle
Ramp-up
Policy Support
Cash Flow
In many countries, **government** plays an **active role** in encouraging investment in renewable energy; this is **unlike most other types of project finance**
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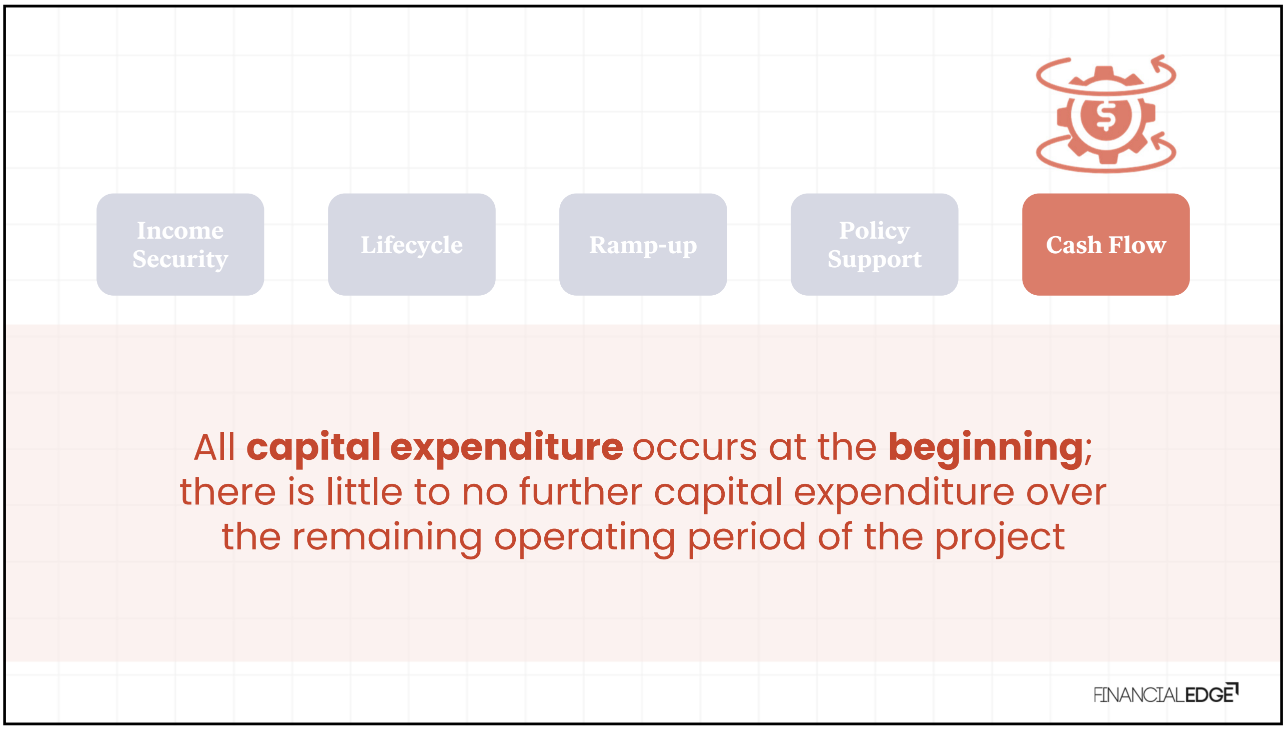
Income Security
Lifecycle
Ramp-up
Policy Support
Cash Flow
All **capital expenditure** occurs at the **beginning**; there is little to no further capital expenditure over the remaining operating period of the project
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