



**A4S**

**CFO LEADERSHIP  
NETWORK**

# EMBEDDING SUSTAINABILITY INTO CAPEX DECISIONS

**Case study: SSEN Transmission**





# WHAT

## BACKGROUND

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SSE is a FTSE 100 energy company that operates and invests across the UK and Ireland. Our purpose is to provide energy needed today while building a better world of energy for tomorrow. Our vision is to be a leading energy company in a net zero world. To get us there, we have a strategy in place to create value for shareholders and society in a sustainable way through successful development, efficient operation and responsible ownership of energy infrastructure and businesses.

Scottish & Southern Electricity Networks Transmission (SSEN Transmission) is part of the SSE Group and is responsible for the electricity transmission network across the north of Scotland. Our network consists of underground cables, overhead lines and electricity substations, extending over a quarter of the UK's landmass, crossing some of its most challenging terrain.

The north of Scotland is powered by wind and water; over 80% of the connected generation capacity on our network is renewable energy. This energy powers all of the homes and businesses in the north of Scotland, and around two-thirds is exported onwards to the rest of the UK. Renewable power from the north of Scotland is critical to the national decarbonization effort to achieve net zero by 2050 and our commitment is to build and operate a network for net zero to support this vision.

In doing so, we undertake a significant amount of investment in our network every year to support the development of renewable energy and ensure that this can be transported to where it needs to go. Our work does not stop here however; we are determined to play a leading role in building a sustainable future as a business on the forefront of a transition to a low carbon economy, an ambition which has been consistently shared, and emphasized, by our stakeholders.

We believe the decisions we make over our capital expenditure (capex) is one of the key means at our disposal to build a network for net zero. During our current RIIO-T2<sup>1</sup> Business Plan (2021-2026), we propose to invest at least £500m per year into our network to reinforce existing assets and develop new infrastructure to support renewable energy growth. Our assets may be used for up to 45 years, and at times beyond, therefore the decision-making process must be robust to ensure we invest in a manner which is creating net benefit for our customers, society and the environment over the long term.

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<sup>1</sup> Ofgem (Office of Gas and Electricity Markets) regulates the prices network companies charge to run the gas and electricity networks in Great Britain. RIIO-T2 refers to the gas and electricity transmission network price controls from 2021 to 2026.



# WHY

## WHY CONSIDER SUSTAINABILITY IN CAPEX DECISION MAKING

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As a business, SSEN Transmission is committed to leadership in sustainability. Society expects businesses to act responsibly and transparently, with accountability for impacts on both people and the environment. We operate in some of Scotland's most precious landscapes and we are determined to contribute to the national effort to tackle climate change. We have an equally strong commitment to manage in a positive manner the impact of our activities on the local environment and communities in which we live and work. Our sustainability ambitions therefore cover areas such as enhancing biodiversity, achieving zero waste to landfill, utilizing local supply chains and meeting the needs of vulnerable consumers.

Sustainability is a diverse concept for us, and we are constantly working to apply sustainability principles to all areas of our business. When it comes to capex, our most material contribution to a sustainable future is by enabling the development and transportation of renewable energy. We currently have over 6GW of renewable energy connected in the north of Scotland, and this is projected to grow to around 33-35GW by 2050. To respond to this, we need to facilitate the development of a network which can host and manage this power supply, and this means capital investment. Our investments are driven by the growth of sustainable energy, the two go hand-in-hand, and this relationship is reflected across our decision-making processes.

It is clear why we must entrench sustainability in our capex decisions and what we are required to do in response to the growth drivers; the area which requires more detailed processes and careful consideration is how we deploy our capex. As with any asset intensive business, there are a significant amount of options available to us across the lifetime of asset development, deployment and decommissioning. These options must be given due consideration, and their costs and benefits assessed, so that we can make informed decisions on which investments need to take place at what time. A core tool we use to carry out this investigation is cost benefit analysis, a process which has matured in recent years to include sustainability considerations.

# HOW

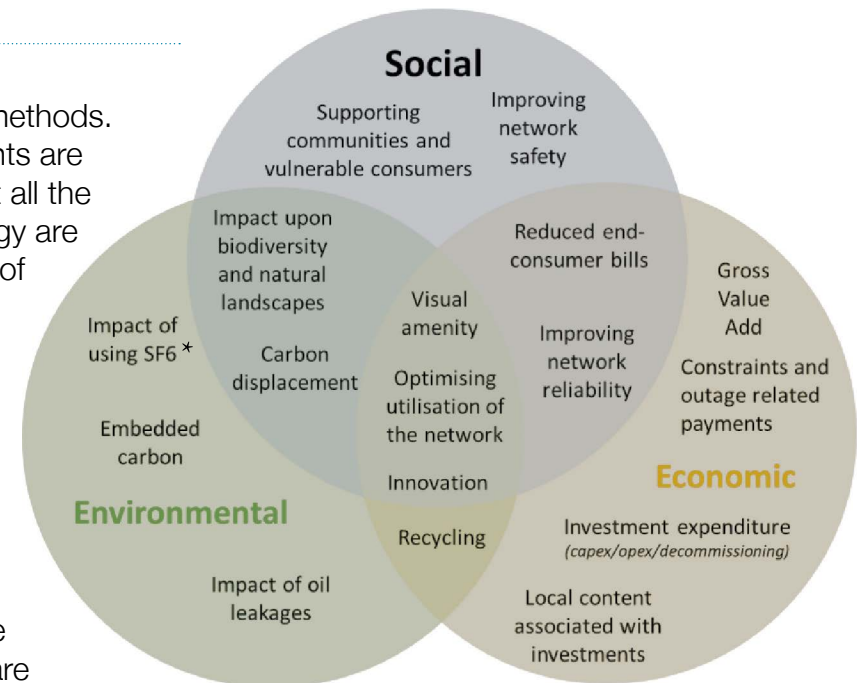
## MATURITY IN COST BENEFIT ANALYSIS

As part of SSEN Transmission's preparation for our RIIO-T2 Business Plan 2021-2026, which forms the core of our regulatory price control, we revised our cost benefit analysis (CBA) methodology. The purpose of the methodology is to assist decision makers to make informed choices by assessing the comparative societal, economic and environmental trade-offs associated with investment options. To support our commitment to sustainability we must be able to assess the socioeconomic and environmental impacts of our investments, whether that be through numerical quantification or a qualitative assessment. Our CBA framework is structured in a manner to consider the whole-life costs and benefits of our investments; taking into account a diverse range of factors (see figure on the right).

It is well understood that when it comes to social and environmental factors, it is not always possible, nor desirable, to judge

impacts based on quantitative methods. Sometimes qualitative judgements are more appropriate. So, whilst not all the areas detailed in our methodology are included in the quantitative part of the analysis due to challenges in monetization, every area is considered when making investment decisions.

This framework moves beyond a traditional approach to CBA which focuses mainly on cost minimization to deliver value to stakeholders. By broadening the scope of our methodology, we are acknowledging value creation from a more holistic perspective, mapping out the true impact that our capex profile has on the economy, society and the environment. Different areas of the business provide data that is relevant to the investment options in question. This enables robust analysis to take place.



\*Sulphur hexafluoride (SF6) has been used extensively across the electrical industry as an insulating gas for switchgear in substations. SF6 was chosen for its excellent insulating properties but it is a greenhouse gas that is 23,500 times more harmful to the earth's atmosphere than carbon dioxide which if released, stays in the atmosphere for over 3,000 years. Reference: [SSE Website](#)



## SEVEN CORE STEPS TO FACILITATE THE CBA

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As a regulated business, every investment we propose must be reviewed and approved by Ofgem, the regulator for the gas and electricity markets in the UK. Ultimately, through our CBA process, we put forward the option to the regulator which we believe brings the most value to customers, society and the environment, reflecting our conviction to build a sustainable network. Before this evaluation of the proposed option can take place with Ofgem; we ensure that the appropriate analysis has taken place. To do this, seven core steps must take place to facilitate the CBA:

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### 1. **Identification of investment need**

Investment need can originate from various sources; from system planning requirements, asset condition reporting and generation connection requests, to name a few. Early identification of the investment need and the associated timescales allow the business to begin the planning process.

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### 2. **Initial options assessment**

Once the investment need is agreed on; our System Planning Investment Engineers and Asset Engineers collate an initial list of possible investment options and provide detailed mapping of the required works associated to each option.

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### 3. **Options workshop**

The initial long list of options is brought to an options workshop to be discussed by our Regional Development Project Managers, Planning Engineers, Environment Managers and Regulation Managers. At this workshop a wide range of factors relating to each option are discussed at length, including impacts on the environment, communities, construction, power flow security and regulatory matters. Following these discussions, the options which perform best against these criteria are shortlisted.



## SEVEN CORE STEPS TO FACILITATE THE CBA

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### 4. **Capex workshop**

The shortlisted options are given to our cost estimation specialists, to detail in full the whole life capex costs involved with each option. The figures that are agreed at this stage are a key input into the CBA model.

### 5. **Wider CBA inputs**

In addition to the capex profiles, other important costs such as operating expenditure (opex), embodied and displaced carbon and wider Gross Value Add (GVA), and any other relevant impacts are gathered. This process assists in determining whether or not the proposed option is progressing the network towards a net zero pathway.

### 6. **Formal CBA first round**

Gathering together all of the relevant data for the finalized options, a CBA takes place to calculate the Net Present Value (NPV) of the finalized options which have been put forward. The option which produces the highest NPV is in general considered to be the option which creates the most value for stakeholders. This approach can be augmented for complex investment decisions related to a range of different generation scenarios; here we include least worst regrets analysis. (for more information, see pages 24, 30-31 of our [Cost Benefit Analysis Methodology](#)).

### 7. **Review, checks and sensitivities**

Following the first round CBA, the option(s) which perform strongly are discussed at various levels of seniority within the business, to investigate further checks on the input figures and decide on sensitivity analysis which may be applicable. This process can be repeated as many times as necessary before the final preferred option is signed off by management to be presented to Ofgem.

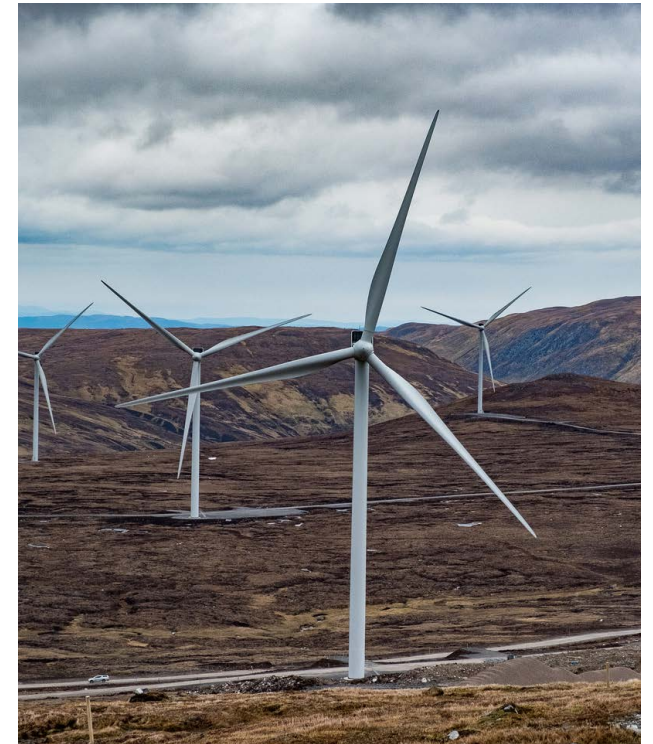
## LOOKING AHEAD

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Embedding sustainability at the heart of capex decision making should be rooted in the corporate purpose. When the strategy of the company is centred around a commitment to sustainability this will heavily influence the capex profile. For SSEN Transmission, our RIIO-T2 Business Plan puts net zero emissions at the heart of our business activities, an intent which shapes all the decisions we take and provides an appropriate framework for making choices which will create long-term value.

With this commitment reflected at SSE Group level, we work in partnership to develop our approaches to help us invest in a network to enable and support the growth of renewable energy across the north of Scotland. We look forward with great interest to the future development of our network and are committed to further understanding how our capital investments can create the maximum value for our stakeholders, wider society and the environment.

[Download](#) our Cost Benefit Analysis Methodology for more information.



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