nationalgrid

Innovating
with the
System Operator

Contents

Collaborate with the System Operator to deliver innovation projects

National Grid System Operator (SO) is investing in innovation by working with industry and academia to develop and deliver innovation projects. We are looking to collaborate with partners to solve challenges facing the gas and electricity systems.

As the System Operator's Innovation team, we:

- develop the organisation's Innovation Strategy and innovation priorities

- execute this Strategy by developing, funding and governing projects that tackle the SO's innovation priorities

- share the outcomes and impacts of innovation with customers and stakeholders.

How our innovation process works

There are five stages in our innovation process (see Figure 1 on page 3). Potential collaborators and suppliers can get involved in the process during the first two stages, Ideation and Business case.

During the Ideation stage:

We are eager to hear your thoughts and ideas about innovative approaches to solve challenges facing the System Operator. We run activities to source new ideas (see our events page for details), but we welcome ideas and proposals at any time.

If you have an idea, please email us at box.SO.innovation@nationalgrid.com

During the business case stage:

We identify challenges internally and build innovation projects to help solve them. We then seek and engage suppliers and collaborators to help deliver these projects. Understanding the expertise and capabilities of potential suppliers helps us work with the best partners. We encourage you to get in touch if you have expertise that matches our innovation priorities.

Our priorities are described in our innovation strategy, which can be found on our website.

There are two decision points in the business case stage:
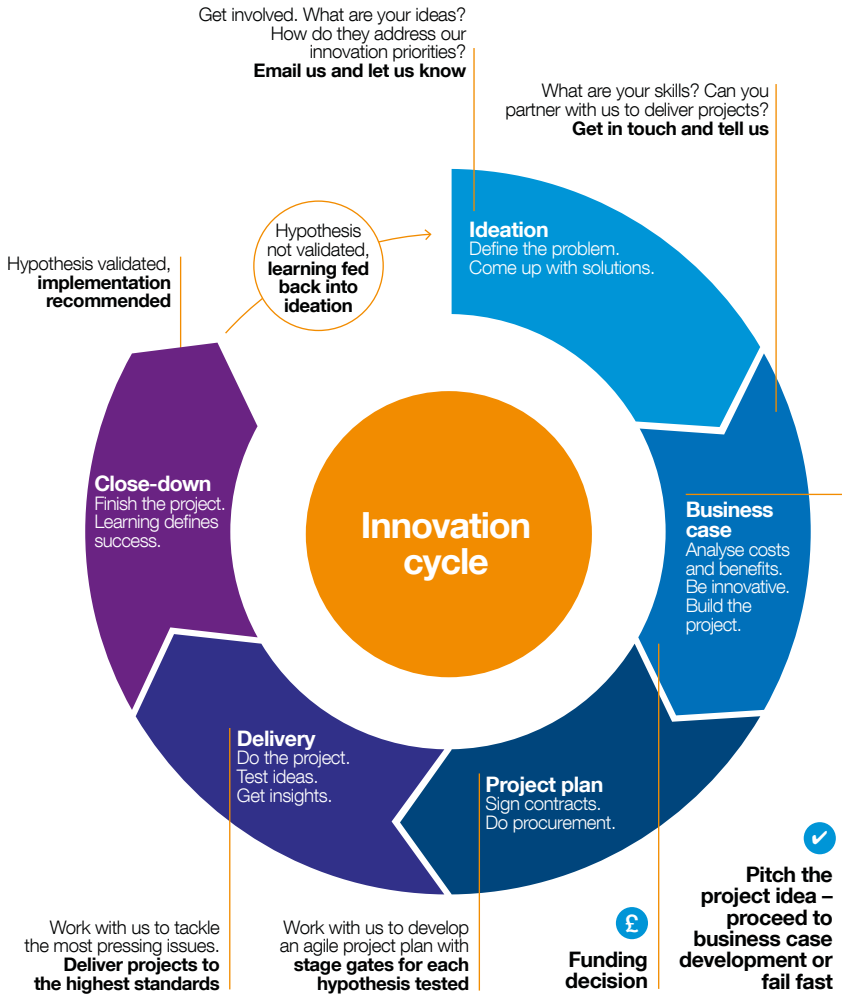
✔ Initial pitch

All project concepts are assessed against our innovation priorities and resource availability during a short initial pitch.

£ Funding decision

Project concepts that satisfy further cost-benefit analysis are presented for a final funding decision. If funding is approved, we then work together to deliver the project, including reporting and knowledge sharing.

Figure 1
Our innovation process

Get involved. What are your ideas?
How do they address our
innovation priorities?
Email us and let us know

What are your skills? Can you
partner with us to deliver projects?
Get in touch and tell us

Hypothesis
not validated,
**learning fed
back into
ideation**

Ideation
Define the problem.
Come up with solutions.

Hypothesis validated,
**implementation
recommended**

Close-down
Finish the project.
Learning defines
success.

**Innovation
cycle**

**Business
case**
Analyse costs
and benefits.
Be innovative.
Build the
project.

Delivery
Do the project.
Test ideas.
Get insights.

Project plan
Sign contracts.
Do procurement.

✔
**Pitch the
project idea –
proceed to
business case
development or
fail fast**

£
**Funding
decision**

Work with us to tackle
the most pressing issues.
**Deliver projects to
the highest standards**

Work with us to develop
an agile project plan with
**stage gates for each
hypothesis tested**

Ideation

The first stage of our innovation process is to articulate the specific challenge under one or more of the identified innovation priorities (see our Innovation Strategy) and consider different approaches to solving it.

We adopt an 'open innovation' approach that involves System Operator colleagues and third parties, and uses different tools, channels and events to scope out potential solutions.

These include:

- Workshops with System Operator teams on specific problems that they face.

- Customer visits to understand their issues and explore ways to address them.

- Themed hackathons and other dynamic events that explore creative approaches to difficult problems.

- Online engagement through social media (Twitter handles, LinkedIn profiles).

- Calls for third-party proposals (e.g. NIC project ideas).

- Contribution to collaborative working groups (e.g. Energy Networks Association, Eurelectric, ENTSO-E and ENTSOG).

- Engaging leading individuals and organisations in the sector, collaborating and knowledge sharing with network companies in GB and around the world.
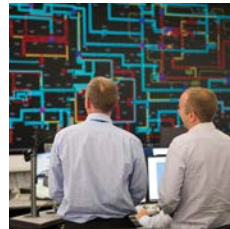
Case study
#SOHack

In September 2016, we held our first internal SOHack to tackle some of the biggest challenges facing the SO.

The challenges
Five challenges – one for each of the multidisciplinary teams – were framed in collaboration with SO leadership:

#1
21st Century
Control Room

#2
Market Leadership

#3
Public Demand
Side Response

#4
Beyond Natural Gas

#5
Grassroots
Engagement

The two-day event saw each team working in collaboration with developers, designers and facilitators to move through the ideation stage of the innovation process. They built prototypes of their ideas and tested them with customers and stakeholders, before pitching their ideas to the judges (SO Leadership team) in a 'Dragon's Den' style panel.

Two ideas were successfully implemented in the business, another is still being developed and the remaining three were deliberately stopped since resources could be better deployed elsewhere. This reflects the level of risk that SO Innovation is aiming for – read more about this in our <u>Innovation Strategy</u>.

Business case development

The second stage of our innovation process develops the idea into a business case and follows a two-phase process:

Figure 2
Business case
development

Phase 1
Discovery

The Discovery phase sketches out the idea at a high level: the current problem; the proposed solution or hypothesis; the project activities and outputs; and a ballpark estimate of costs and benefits. This allows us to gauge whether the idea should fail fast, or progress to phase 2.

Initial pitch

Fail fast

Phase 2
Development

The Development phase is a more detailed project proposal, underpinned by a robust cost-benefit analysis (see page 7 for more information).

Project concepts are pitched at the end of both the Discovery and Development phases, and are either approved, iterated or failed fast.

Project plan

Funding decision

Fail fast

Cost-benefit analysis

Our cost-benefit analysis framework has been developed to ensure project proposals deliver maximum value, and to direct investment towards projects that deliver the greatest impact to the organisation, the system and customers.

Figure 3
Elements of the cost-benefit analysis

Benefits

To ensure that innovation projects provide significant benefit to the system and consumer

Technical merit

To ensure that projects are innovative yet achievable

Strategic relevance

To ensure that projects are aligned with the SO innovation priorities

Costs

To estimate all costs associated with achieving stated benefits (i.e. inclusive of innovation project, subsequent implementation into the business, and ongoing operation)

Risks

To ensure that relevant risks are identified and mitigated

Existing activities

To ensure that the project is additional and complementary to existing projects

Project plan and delivery

The third stage of our innovation process develops the business case into a project plan. Once a proposal is approved for funding, our Portfolio Governance team works with suppliers and collaborators to:

• confirm a detailed project plan, with deliverables organised in stage gates

• confirm the project budget

• draft and sign the contract.

The fourth stage of our innovation process is project delivery. A dedicated SO project lead acts as the main point of contact for project delivery. Monthly updates with the Innovation team allow progress, risks, issues and opportunities to be shared and responded to.

Funding is released following achievement of each project milestone.

Closedown

The final stage of our innovation project is closedown. Every project will result in one of three outcomes:

1

The hypothesis is proven, and the recommendation is to implement the solution or recommend a change in process or industry codes

2

The hypothesis is proven, and the recommendation is to undertake further work (taking the project to the next stage of maturity)

3

The hypothesis is disproven, and the recommendation is to try a different approach based on the learnings

The SO Innovation team works with the project team as the recommended outcome is delivered and implemented.

What the SO brings to innovation projects

Our involvement in innovation projects can take a number of forms:

1

Funding – our primary sources of funding are:

- **Ofgem's Network Innovation Allowance** (NIA), an annual allocation dedicated for innovation activities led by the SO. The focus is on earlier-stage research and development, or small-scale demonstration projects.

- **Ofgem's Network Innovation Competition** (NIC), a competition open to all Network Licensees. The focus is on larger-scale demonstration projects.

- Other sources of **grant funding**, e.g. Innovate UK and Research Council funding. The focus of these funding sources can differ but is usually on early-stage projects and specific to a certain theme.

2

Time, expertise, data

Our colleagues and systems provide valuable input to projects. Our subject matter experts can also assist in identifying and scoping problems for third parties to solve.

3

Letters of support

Where a project proposal has the potential to address our innovation priorities, we are keen to support third-party bids for grant funding.

This will always include a commitment to offer one or more of the support mechanisms outlined in 2.

Our innovation team

Carolina Tortora
Head of Innovation Strategy
(Maternity leave)

Mark Herring
Acting Head of
Innovation Strategy

Michael Ashcroft
New project applications

Preetam Heeramun
New project applications

Cian McLeavey-Reville
Project funding

Jeffrey Beyer
Communication and events

George Daniel
Project support

Joshua Visser
Portfolio governance

Geoff Down
Senior analyst

Get in touch
We aim to facilitate open and collaborative innovation
across the SO and the wider industry. We believe this
approach is essential to addressing the innovation
priorities set out in our Innovation Strategy. If you have
a great idea then please get in touch with us!

box.SO.innovation@nationalgrid.com