SUSTAINABLE ENERGY AUTHORITY OF IRELAND

Case Stories on effective energy management

Case Story Guidelines

SUSTAINABLE ENERGY AUTHORITY OF IRELAND

Contents

1.0 Introduction

Energy use is a growing focus of attention in all sectors of the Irish economy, for cost control reasons and because it is the dominant factor in greenhouse gas emissions. The second National Energy Efficiency Action Plan in 2013 reaffirms the obligations originally set out in its predecessor in 2009, identifying national efficiency policy priorities between now and 2020. Under the action plan, Ireland is committed to a 20% energy savings target in 2020. Reaching this target will require radical action by all sectors of the economy. The target is bold, but reaching it is essential for our economy, our environment and the country.

"The Government has committed to achieving, by 2020, a 20% reduction in energy demand across the whole of the economy through energy efficiency measures".

National Energy Efficiency Action Plan 2009 – 2020

In order to promote transparency in the market and encourage an upsurge of interest in energy efficient projects across all sectors, a collective effort should be made to share experience, actions and innovations by companies and organisations. One way of disseminating knowledge throughout the sectors is through mini case studies of successful energy management actions that companies and organisations have carried out.

"The public sector will improve its energy efficiency by 33% and will be seen to lead by example - showing all sectors what is possible through strong, committed action".

National Energy Efficiency Action Plan 2009 – 2020

Through simple and concise *'Case Stories'*, such objectives can be achieved, helping others avoid 're-inventing the wheel', while providing a short-cut to success. The aim is to develop short and succinct descriptions of good practice success stories in energy management, presenting the key information in the form of bullet points and brief text descriptions, illustrated by diagrams, images and photographs. Aside from providing others the opportunity to benefit from their accomplishments, companies and organisations can use this platform in an exemplary manner, showcasing their achievements on energy and emissions reductions on a national stage.

While allowing for a company to showcase their energy-related achievements on a national stage, a Case Story also provides other organisations with good practice success stories to promote effective energy management across all sectors.

SEAI has developed these Guidelines to assist companies and organisations in presenting their achievements in energy management in the form of Case Stories. The guide provides support to organisations who wish to submit information on energy management and energy efficiency projects for publication, inclusion in reports and features and articles on the SEAI website. Preliminary requirements, illustrations and examples are provided in this guide to assist companies and organisations in producing accurate, efficient and effective Case Stories.

2.0 What is a Case Story?

A Case Story is a succinct, two-page description of a particular project, approach or activity on successful energy efficiency/management and/or energy saving. It showcases a good practice, which could serve as an example for other companies and organisations facing similar challenges.

New energy management bureau helped cut electrical consumption by 15% in just four months.

(Údaras na Galetachta)

SEAI provides the guidelines and the templates, but it is the requirement of the applicant (i.e.: company/organisation or contractor/consultant who was involved in the project, approach or activity) to complete the Case Story and provide all the necessary information in the specified format.

Passive-design retrofit in office achieves 45% energy reductions by avoiding air conditioning.

(Louth County Council)

The information for the Case Story can be provided by the company or organisation itself, and does not have to be independently verified nor prepared by an independent author who is external to that company or organisation. However, if the company or organisation wishes so, as mentioned above, a contractor who was involved in the project, approach or activity that the company or organisation wishes to report on can provide the Case Story on behalf of that company or organisation. As there is a contractor recommendation section provided towards the end of the Case Story template, this could be an incentive for a contracting body to do so. However, even in this scenario, it is important that the Case Story is developed in the context of the company or organisation who received the service, and not the contracting body.

Energy awareness campaigns save 15% in Garda stations.

(An Garda Síochána)

3.0 What kinds of Case Stories are eligible?

Case Stories can cover technical, management, design, awareness or other aspects of energy efficiency/management across commercial, public, agriculture, industry and transport sectors. Projects should demonstrate a positive impact and have the potential to be replicated by other companies or organisations. Ideally, before-and-after information should be available for the project in cases where this is relevant.

4.0 Basic requirements

Information provided in the Case Stories shall be short & succinct. Text is not to exceed designated boxes provided in the Case Story template.

Applicants must address each requirement listed below in their Case Story application before the Case Story will be considered for publication by SEAI.

A. Adhere to the template
B. Address all headings
C. Obey the text amount restrictions/limitations set by the text boxes in the template
D. Authenticate data where relevant (energy savings, including before and after)
E. Ensure high quality of images and photographs

It is essential to carefully follow the template provided.

5.0 The Case Story template

Applicants should ensure that they keep text within the boundaries defined in the Case Story template. Most sub-sections in the Summary require a maximum of one line of information. Such limits should be adhered to.

The Case Story template is in a standardized format whose arrangement should not be altered by the applicant. There are designated areas provided for each of the sections required. These sections will be described in this section. Most areas within the template require a standard text-in-box input, while there are also some drop-down menus for the applicant's selection.

This template allows for the applicant to complete the majority of the information and text considered in the Case Story. The only feature which will be considered by SEAI and not the applicant is the icon section near the top of the Case Story's first page as illustrated below, and the associated footnotes. These icons will be populated by SEAI based on the data supplied by the applicant in their submission.

The Case Story should ideally include the following elements and structure:

- **Summary** (which will include 1 image)
- **Background** (which will include 1 image)
- **Project Description**
- **Benefits** (which will include 1 image)
- **Client Recommendation** (which includes contact details of the client [company or organisation] and the contracting body who performed the specific service).
- **Quotations** (2 quotations shall be provided in the designated areas on the template)

Each of the sections listed above shall now be described in more detail. Note: the full Case Story template for completion is in Section A of the Template document.

Above: Sun pipes provide natural lighting in office.

Relevant images should be supplied in high quality, accompanied by appropriate caption or description; and approved for use in the Case Story, including approval for publication on the SEAI

5.1 Summary

The Summary is effectively divided into two distinct parts. The first part, as shown below, is a descriptive overview of the project, approach or activity providing information on the main actions of the project, the duration, the capital cost, the payback period, the type of grant assistance received if any (e.g.: SEAI support) and so on. As stated within the template, these sub-sections will be one line maximum in length, unless stated elsewhere. This is important in order to keep the Case Stories as standardized as possible and to promote comparability between cases. Other areas within the Summary section use drop-down menus for selection (Sector, Dates of project).

There is a space provided on the right hand side of this section for an image; it would be beneficial for this to be a recent and relevant high-quality photograph representative of the project or development which is being portrayed in the Case Story. For example, if the project involved a complete lighting retrofit for an existing building, it would be useful to have a high resolution image of the new lamps and light fittings operating in their environment. Again, it is important for the image to be scaled according to the space provided; the applicant should ensure that the image does not exceed the boundaries and subsequently alter the format and layout of the template. The image size can be altered within the template.

Summary

Company name:	Name of client (one line maximum)
Project actions:	Describe the project (two lines maximum)
Dates of project:	Choose start date from drop-down calendar to Choose end date from drop-down calendar
Contract type:	Example: Conventional, EPC, EPRP, etc.
Finance source:	Internal, elsewhere? Please state
Additional funding:	Choose an item
Total project cost:	Capital, labour and ancillary/consultancy cost
Simple payback time:	State the payback period (one line maximum)
Savings verification:	Method of verifying energy savings (one line)

Type the image caption here (maximum length of two lines).

Technical and organisational energy-related changes at Dublin Bus have achieved savings worth over € 8 million from 2009 to 2012.

The second part of the Summary section, as shown below, requires the applicant to provide the important before-and-after details for the project. Such metrics are generally used in industry to determine the success and level of achievement in a project, so are very useful indicators to be used in a high-level summary. Applicants are required to provide before-and-after data for annual energy consumption, annual energy costs, and annual CO_2 emissions.

	Annual Energy (kWh)	Annual Costs (€)	Annual CO_2 (kg)
Before project	Enter figure here	Enter figure here	Enter figure here
After project	Enter figure here	Enter figure here	Enter figure here
Savings (% in parentheses)	Enter (Enter% saving)	Enter (Enter% saving)	Enter (Enter% saving)

5.2 Background

The Background section, as seen below, requires applicants to give details on the company/organisation and facility *before* the implementation of an energy-related project, approach or activity. Further instructions are given in the template. Again, care should be taken to keep text within the specified text-box while still giving attention, as best possible, to all of the points listed in the instructions for this section. Like the Summary section, this section also contains a specified area for a project image. Again, this should be a high-resolution photograph relating to the development described in the Case Story. The same instructions apply for this image as in the previous section.

The background should give details of the drivers and motivations for the organisation to initiate an energy management or energy efficiency project. Details of the facility that the project was carried out in should be provided along with the energy usage or tendencies before a project was implemented.

Background

Refer to some or all of the areas below while ensuring text remains on this page and doesn't spill on to next:

- Give a description of the building/facility the project was carried out in (e.g.: age of building [year of construction], size [floors or m2] and type of building, number of users, other significant characteristics if relevant.)
- Why the project was developed? (e.g.: refurbishment programme, significant existing energy use, poor comfort conditions?). Elaborate on this.
- How was it decided to do what was undertaken in this project, what was the planning that was involved? Who funded the project (if SEAI were involved, elaborate, give sentence on this)?
- What were the objectives, motives, desired outcomes and goals of the project?

A 1MW energy efficient boiler was installed to replace the existing backup boiler in the main boiler plant-room, and a BMS system was installed to control heating circuits. A large-scale retrofit involving the replacement of T8 fluorescent lighting with T5 high frequency lighting was also carried out in many areas.

(Dublin Institute of Technology)

5.3 Project Description

The Project Description, as illustrated below, aims to detail the main aspects of the project, approach or activity. It elaborates on the brief description given in the Summary. Further details are given within the template.

Project Description

Give a sentence on the contractor(s) (i.e.: ABC Contractors were chosen to carry out the works). Also describe the process of procuring the successful contractor (e.g.: a form of tender procedure, selected based on merit, etc.)

Give a detailed description of the measures undertaken/technologies employed (elaborate on the brief description in the Summary). Why were the measures/technologies chosen over other options (i.e.: justify the selection…)?

What type of contract was used (standard, design/build, EPC, EPRP?), any notable conditions in the contract, etc.

Refer to any measurement/monitoring carried out, especially any performance indicators that were used.

Energy efficient lighting system & controls aim to reduce consumption from 39,000 kWh to 4,500 kWh p.a.

(Curragh Camp, Defence Forces)

5.4 Benefits

Benefits

The following content should be considered for this section:

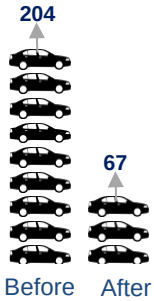
Improved performance of the building/organisation due to the measures/technologies carried out in the project. Identify the main benefits, e.g.: energy saved (kWh), energy cost savings, CO2 savings, capital cost, payback period (expand on the info in the Summary section).

The value of the energy savings in terms of the particular service that is regularly delivered by the company/organisation (e.g.: if a library - savings in terms of purchasing X books, if a school – savings in terms of powering X computers a year, etc.). Then refer to graph on left.

If appropriate, comment on any benefits experienced through innovation. This could regard the actual project works (e.g.: the installation and performance of a novel technology, new strategy development, etc.). This could also involve procurement methods, contractual conditions, etc.

Any other non-energy benefits (reduced maintenance, benefits to user, improved comfort conditions, etc.)?

No. of parked cars required to pay for daily Energy use



Energy savings from lighting upgrade of public car-park

The Benefits section, seen above, requires information on any energy-related benefits such as lower operating costs and lower greenhouse gas emissions. This can be considered an expansion on the information provided in the Summary section. However, this is also an area to discuss non-energy benefits achieved by the project or activity such as reduced maintenance, benefits to the service user, better working conditions, greater productivity, etc. As can be seen above, there is another void here to be filled with an image. To complement the information in this section, specifically regarding the value of the savings (see template for further details), this void is specifically for a graphical representation of the value of the savings in terms of the service delivered. This is a novel and interesting way of expressing the savings achieved for a particular project, while also remaining relevant to the organisation and its services. An example of this concept for energy savings resulting from a car-park lighting upgrade is illustrated on the right.

Other examples might include: the energy saved in *'X'* project could pay for:

- (Hospitals) … *'XX'* outpatient visits per year;
- (Schools) … powering *'XX'* computers in a year;
- (Local Authorities) … purchasing *'XX'* books for a public library;
- (Government Departments) … the monthly salary of *'XX'* staff.

"The car park is so much brighter now, I feel safer using it."

(User of car-park after lighting upgrade)

5.5 Quotations

There are two separate sections available in the template for quotations by those involved in the project; one after the Summary section and the other after the Benefits section. For each, quotations should not exceed two lines. To gain a more objective and overarching viewpoint of the project and its merits, a quotation by members of two separate parties should be considered. For example, a project team member (whether with the client or the contractor) should give a statement about the development, while a user of the service, if possible, could give the other.

5.6 Client Recommends

This section, illustrated below, requires details of the specific project team members. Clients (i.e. the company/organisation) can list the most influential people in their company/organisation with regards to the project described in the Case Story. There is a sub-section included to recommend any contractor/consultant/supplier that was used in the development. There is also a space here for the applicant to include an image (preferably contractor/consultant/supplier's company logo). If applicants require more than one company logo to be included in this section they should inform SEAI in their application and include the image in an email. It should be noted, the client is not obliged to recommend a contractor/consultant/supplier here; doing so should only be considered if the client was completely satisfied with the service received, and if they would recommend this service to their peers. This section, of course, can be an incentive for some contractors/consultants/suppliers to actually develop the Case Story themselves, on behalf of the client, and in return receive a recommendation that is publicised on a national stage. In this case, such an agreement must be made between both parties, and the consultant/contractor must write the Case Story in the context of the company or organisation.

It is important for the applicant to confirm their understanding that the recommendation of a contractor/consultant or supplier for work performed in a Case Story is completely the applicant's decision. The relevant section of the declaration should be signed in Section B of the template document.

6.0 Proposal and submission of Case Story

Should you have a completed project, approach or activity relevant to energy efficiency or energy management and you would like to be considered for a Case Story then please email:

- For public sector case studies: **publicsector@seai.ie**
- For private sector case studies: **business@seai.ie**

In the email, please send a brief outline or summary of the project, approach or activity, including:

- Main action(s) carried out and where.
- Energy savings (kWh and %).
- Cost savings (€).
- Capital cost and Payback time.

- Any other significant points, including non-energy benefits.

SEAI will respond to applicants in a timely manner via email. Once accepted, the applicant should complete their Case Story as specified within this guide, and provide all the necessary information in the required format. Once the relevant information has been included in the Case Story Template/Declaration, the applicant can save the document file and include it in an email to one of the relevant email addresses listed above. An example of a completed Case Story has been included in this guide featured in Appendix B; applicants should revise this when completing their Case Story and before they send their applications to SEAI.

The Case Story documents should be named in the format:

CaseStory_OrganisationName_Year.doc

So, if SEAI were to submit a Case Story in 2013:

CaseStory_SustainableEnergyAuthorityOfIreland_2013.doc

Company/organisation names should not be abbreviated in file names and acronyms of any sort should not be used.

7.0 Assessment and approval procedure

SEAI will assess Case Story proposals and applications and determine their suitability for publication.

- Applicants will be notified by email if their Case Story has or has not been accepted for publishing.
- Any requested edits or changes by SEAI will be sent to the applicant for their approval prior to publication of the Case Story.
- Feedback on case stories will be provided to unsuccessful applicants if requested.

8.0 Declaration by applicant

The applicant should sign the Declaration statement included in Section B of the template document before submitting their application. A scanned version of the applicant's signature will suffice here.

Appendix A: Checklist

General

- ☐ The Case Story template has been strictly adhered to.
- ☐ All of the section headings within the Case Story template have been addressed.
- ☐ Text does not exceed the boundaries defined by the text box sizes in the template.
- ☐ The format or layout of the template has not been altered in any way.
- ☐ The Case Story has been supplied as a Word document (not a PDF or similar).
- ☐ A signed Declaration using Section B of the template document has been included (signatures and other entries on the Declaration can be a scanned and embedded).
- ☐ Have both sections (A and B) of the template been completed?

Photos/Images

- ☐ Relevant photos/images/logos have been supplied.
- ☐ All photos/images meet the specifications given.
- ☐ Captions or descriptions for photos/images are included.
- ☐ All photos/images have received the necessary approval for usage by SEAI.

Appendix B: Case Story Example

Forest Logistics Energy Optimisation Project

Summary

Company name:	Coillte
Project actions:	Forestry Logistics Energy Efficiency Project
Dates of project:	January 2011 to December 2013
Contract type:	ESCo, Coillte acted as supplier to SMEs
Finance source:	35% grant from SEAI
Additional funding:	SEAI BEW Scheme
Total project cost:	Approx. € 750,000
Simple payback time:	2 years

David Gunning, CEO Coillte and Pat Rabbitte TD, Minister for Communications, Energy & Natural Resources pictured at launch of energy reduction project

	Annual Energy (kWh)	Annual Costs (€)	Annual CO_2 (kg)
Before project	99,167,000kWh	12,288,970	26,135,073
After project	88,967,000	11,195,596	23,443,073
Savings (% in parentheses)	10,200,000 (9.5% saving)	1,093,374 (8.9% saving)	2,692,000 (9.5% saving)

"Very worthwhile project. The training has taught us that you have to keep working at saving fuel. Fuel savings have been enormous, way beyond what we expected at the start of the project; when we were sceptical that the effort required would produce significant results." Gerry McMorrow, McMorrow Haulage

Background

Coillte was established in 1989, today it employs 1,100 people. Coillte Forest's core business is supplying logs to sawmills and panel board manufacturing facilities. As Coillte Project Manager, Mike O' Shea carried out a comprehensive market analysis in 2011, on the current transport operations with a view to introducing improvements and efficiencies.

Log haulage is carried out by independent haulage companies in the Irish forest industry. Haulage is consigned by different parties in the wood supply chain. It was identified that efficiencies could be gained by carrying out a collaborative project with all interested parties in the wood supply chain.

The vision of the project is to utilise state of the art technology in the Irish log haulage fleet to:
- Improve log & equipment security reducing theft with vehicle and trailer tracking
- Empower and strengthen SME log hauliers by reducing fuel usage
- Put in place the infrastructure to take the industry as a whole forward, with the aim that empty running should be reduced to minimum for hauliers and customers

Coillte Contractor loading logs

*Annual energy savings of 10,200,000 kWh have been achieved in this project, the equivalent to the annual energy use in 510 average-sized houses in Ireland. The project saved 2,692,000kg of energy related CO2. Cost savings were calculated to be €1,093,374 per annum. The project supported 14 full-time equivalent jobs per year.

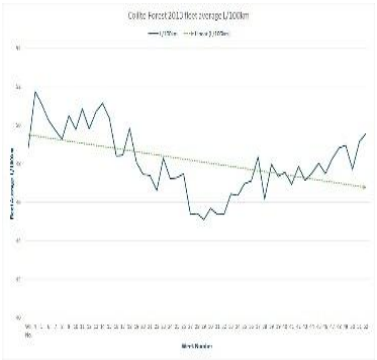
Project Description

After a comprehensive procurement process, which involved bids from all over the world, Blue Tree Systems were selected as the preferred supplier. The specific technologies in this project included:
- GPS trackers on trucks and on trailers (CAN-bus interface & Driver Tacho interface)
- In-Cab computer to automate paper based systems
- Website for haulier to view information & reports

This state of the art technology was offered to all log hauliers at 80% off the negotiated capital cost to encourage rapid take-up with Coillte acting as the ESCo. Coillte paid 45%, an SEAI grant aid covered 35% and the haulier paid the balance of 20%. Upon completion of installation, commissioning and payment to Coillte, ownership and warranty transfers to the haulier. The haulier can then use the reports to:
- Manage drivers' hours (reducing labour costs and driver fatigue)
- Manage routing to reduce empty running and optimise work planning
- Manage operational performance to reduce fuel usage

To help hauliers use this new technology effectively and realise the potential energy savings, Enprova incentivised hauliers to participate in transport energy management training at workshops around Ireland. A second preferred supplier called Asset Forestry Logistics was selected to manage the transport planning and truck dispatch functions within the wood supply chain. They operate a central dispatch transport model and work directly with log hauliers to optimise the transportation of logs from the forests to the processing facilities. They leverage the technology installed in the trucks to bring about efficiencies and improved security initiatives across the Irish wood supply chain.

Benefits



Graph showing weekly fuel efficiency in L/100km (lower is better) and trend (green line) to savings

Every fleet and driver is different, for the exemplar fleet we analysed the changes made over the course of 2013 included:
- Average speed increased from 47kph to 51kph
- Cruise control usage increased from 6% of engine hours to 12%
- Idling reduced as percentage of engine hours from 24.5% to 14.% (includes PTO loading)
- Over-revving remained about the same as predicted by hauliers

The involvement of SEAI brought a different dimension to the project and maintained a focus on an entire export sector on realising energy efficiencies that will benefit both local businesses and Ireland's national energy savings target. The incentives from Enprova and SEAI will ensure that hauliers focus on fuel efficiency to quickly deliver measureable savings. An IPMVP compliant measurement and verification plan is in place to measure, report and verify fuel savings across the truck fleet. Training from specialist trainers, AEMS, help hauliers develop a deep understanding of fuel management that will have positive impacts on their businesses.

The results of this project speak for themselves, savings of 10.2 GWh is a phenomenal achievement. This project was an excellent example of how different parties in the Wood Supply chain worked together collaboratively to achieve outstanding results that ultimately benefits everyone. Mike O'Shea, Business Process Improvement Team Leader, Coillte

Client recommends…

Client(s)

Mike O'Shea
Business Process Improvement Team Leader
Coillte

Mick Fenton
Woodflow Distribution Manager
Coillte

Mark Carlin
General Manager
Coillte

Contractor/Consultant/Supplier(s)

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