



# EXEED Grant Scheme

Application guideline

2017

## Contents

1	Introduction .....	6
2	Objectives of EXEED Grant Scheme .....	7
3	EXEED Certified Program .....	9
3.1	EXEED Certified Distinctions .....	10
3.2	Energy efficient design case studies .....	13
4	EXEED Grant Scheme .....	16
4.1	EXEED Grant support .....	17
4.2	SEAI additional support with EXEED Grant Scheme .....	23
4.3	Who can apply? .....	23
4.4	Eligible projects .....	23
4.4.1	Challenge and analyse .....	26
4.5	Application process and submission requirements .....	27
4.6	Guidance on completing application forms .....	29
4.7	Level of grant funding .....	30
4.8	Eligible expenditure .....	31
4.9	Ineligible expenditure .....	33
4.10	Evaluation criteria .....	34
4.10.1	EXEED Documents Review .....	36
4.11	Standards and Best Available Technology .....	37
4.11.1	New design .....	37
4.12	Payment procedure .....	38
4.12.1	Inspections .....	40
5	Terms and conditions .....	43
6	References .....	47
	Appendix 1 EXEED Grant Scheme timelines .....	48
	Appendix 2 Evaluation of EXEED documents .....	49
	Appendix 3 Eco-design Directive .....	53
	Appendix 4 Building regulations and NZEB .....	56
	Appendix 5 Inspections Scope of Work template .....	59
	Appendix 6 Challenge process for HVAC .....	60

# EXEED Grant Scheme

## STRATEGY CONTEXT

The greatest opportunity to reduce lifecycle energy and carbon is at the early design stages of new investments. Up to 95% of the lifecycle cost is already committed at the end of the design process. Case Study projects have demonstrated that savings available could range up to 50% improvement from a baseline design, however barriers often take precedence in project setting to enable, justify and then accomplish through to operational state. The short time-bound period of design provides the greatest energy saving potential with the most attractive return on investment. A framework that manages and controls the energy efficient design management processes is necessary.

Similarly, with major renovation/asset re-purpose and major energy upgrade projects there is a comparable opportunity to minimise future lifecycle energy consumption using the same energy efficient design management framework.

*EXEED Certified Program* is a new SEAI initiative that provides independent Asset Certification with demonstrated application of the Energy Efficient Design Management process. EXEED is an acronym for Excellence in Energy Efficient Design. It can be applied in the design of new project investments and to projects involving major renovation or major energy upgrade. EXEED Certified specifies project requirements to be implemented and has the objective of determining how optimum energy performance could be achieved and implemented. In addition EXEED Certified specifies requirements that ensure that the asset generated has verified energy performance and has incorporated capability necessary to effectively manage and control energy performance overtime. EXEED Certified provides some key differentiation to other asset certification schemes;

- *Design for Energy Performance* process. Energy performance opportunities are determined with application of a standardised challenge process of the baseline design conditions. This is a different form of audit and includes a fundamental challenge of what is termed ‘energy service’ requirement initially and then followed by a chronological order of engineering challenges and analysis through the layers of the Energy Venn Diagram.
- The final design outcomes and associated energy performance are determined with application of the EXEED processes. All design ‘ideas’ - whether as project inputs and/or fully defined by the *Design for Energy Performance* processes, are captured with an appropriate assessment at system level, including business case for opportunities, implementation and verification requirements.
- *Design for Energy Management* process. This process puts energy management on the design agenda in terms of understanding relevant variables that affect energy

performance, understanding energy performance deterioration conditions and determining an energy measurement plan.

The EXEED Certified Grant Scheme will provide support for implementation of EXEED Certified and also investment aid necessary for additional capital identified through the process and being implemented. This is relevant to;

1. New design projects of any scale complexity and sector.
2. Major Energy upgrades of existing workplaces and assets.

The scope of a major energy upgrade project involves adoption of a system approach and consideration of all opportunities that could delivery optimum energy performance of the asset. Projects that have limited scope that focus on isolated retrofit projects will not be eligible for grant support.

In addition to financial support SEAI will provide additional mentoring, information and advice.

**Commitment to progress to EXEED Certified is a requirement for application and to be eligible for support.**

The 2017 grant scheme has funding constraints within the 2017 work window. It will therefore provide funding support for the extent of work that can be completed within 2017, with the commitment from the applicant to progress towards EXEED Certified.

It is probable for new design projects of a large scale (e.g. Greenfield, Brownfield and Major Renovation projects) that the project design phase may be the extent of work undertaken within the grant window and therefore support may be limited to the additional professional services employed in the energy efficient design processes during 2017.

It is encouraged to consider EXEED Certified application in existing workplaces and assets for implement of major energy upgrades.

The scheme is also eligible and encouraged for design project that are in progress. The EXEED Certified process can be started and planned within the same project window. In this case the baseline design is the current design state and the design challenge commences from this point.

The objective of this EXEED Grant Scheme is to support projects of all types that follow these processes, to support the first uptake of EXEED Certified and to build practical experience and understanding.

The EXEED Grant Scheme is a scheme which seeks to benefit from the exemptions contained within the General Block Exemption Regulation, with particular focus on Article 36 (investment aid enabling undertakings to go beyond Union standards for environmental protection or to increase the level of environmental protection in the absence of Union

standards) Article 38 (investment aid for energy efficiency measures) and Article 49 (aid for environmental studies).

This document provides background and guidance on the Scheme. Reference to IS399 may be useful in the development of your project proposal, specifically Clause 8 Operation.

**Note:**

*IS399 Energy Efficient Design Management* is a Management System Standard from which EXEED was derived. This standard can be used at organisational level to provide a strategy to apply across ongoing investments and to continually improve performance. Within the standard are two significant processes - *Design for Energy Performance* and *Design for Energy Management* and these are central to EXEED.

IS399 Energy Efficient Design Management can be purchased from [www.standards.ie](http://www.standards.ie).

# 1 Introduction

EXEED Certified is a Program with oversight by SEAI that provides independent certification of assets - either created new by design or retrospectively by upgrade achieving optimised energy performance and with energy management capability.

Energy performance is achieved through challenging energy use, energy efficiency and energy consumption. Optimum energy performance is the energy performance that can be achieved within the constraints, obstacles, risks and opportunities that are specific to each project and within the allowable timeframe of design process.

The EXEED Grant Scheme is designed to incentivise take-up and implementation of EXEED Certified, and to further provide investment-aid for energy performance improvement opportunity arising.

The EXEED Certified Program launched at the SEAI Energy Show in April 2016. An early objective is to establish this EXEED grant scheme providing both grant and expert mentoring support for pioneering EXEED projects. Expenditure covered by grant will be any additional professional services to implement the energy efficient design management processes and 2017 capital invested pursuant to EXEED certification. SEAI will proactively engage with the EXEED grant scheme providing stewardship and mentoring support at both group and individual project levels. Part of this process will also include the collection of project information necessary to give assurance to projects of how they are conforming to the requirements of the EXEED standard and to ensure projects' compliance with the terms and conditions of SEAI grant support.

The EXEED Grant Scheme requires a broad range and mix of projects therefore the grant offer is open to applications from any sector and to any size or complexity of project. These can range from small to large, new greenfield/brownfield investments to existing assets that are operational with a major energy upgrade objective. All projects have to follow a systems approach and not focus on isolated initiatives of isolated retrofit opportunity only.

A prerequisite for application is a commitment to the energy efficient design management process and to proceed to EXEED certification for any of the three distinctions of *Designed*, *Verified* or *Managed* to qualify as eligible. The EXEED grant support does not require achieving actual EXEED certification during 2017. Financial support will be provided for all eligible milestone expenditure within the 2017 window that aligns to EXEED Certified milestones.

It is important to recognise that the starting point of the EXEED process can vary and is the current design-state of any project, regardless of its actual design progress. EXEED cannot be retrospectively applied to a new asset but can be applied from the current design-state

providing that the owner/investor is open to optimising energy performance using the process from this point forward.

The EXEED Certified Program and grant support does not therefore require projects to be just commencing - projects can already be active. However projects cannot be active in respect of the specific additional object required to address the reduction in energy consumption or environmental protection.

Where a project is already in progress, potentially at a well advanced stage through to completed detailed design, EXEED will commence from the current design-state. Ideally, energy efficient design management commences from conceptual design, however can commence anytime, and subject to project constraints, regardless of the status of design.

It is crucially important that the grant funding has an incentive effect, i.e.: the ability to achieve environmental protection would not have occurred without the grant aid.

## **2 Objectives of EXEED Grant Scheme**

The main objectives of this grant scheme are:

- to incentivise and support the uptake of EXEED Certified projects across the private and public sectors and to deliver significant lifecycle energy savings for the State.
- to promote EXEED Certified as a supporting strategy to assist Ireland meet its 20% target (31,925 GWh PES) under the Energy Efficiency Directive and to meet Ireland's target 20% reduction in GHG emissions by 2020.
- to develop and mentor pioneering projects of varied project scale, complexity, purpose and application of EXEED.
- to develop practical implementation and experience of the EXEED processes throughout the supply chain, stakeholders and interested parties.
- to develop SEAI knowledge and understanding necessary to determine the additional resource and supports for ongoing oversight.
- to promote the understanding of co-energy benefits that arises with energy projects.
- to demonstrate the effectiveness of the energy efficient design management processes in new design projects.
- to demonstrate the effectiveness of the energy efficient design management processes major retrofit or major renovation projects.
- to collect data relating to the opportunity and return on investment that can be achieved with application of EXEED processes.
- to develop possible interaction of EXEED with energy suppliers under the national Energy Efficiency Obligation Scheme.

# EXEED Certified Program





### 3 EXEED Certified Program

EXEED Certified will provide independent certification of assets, either new or re-engineered, that seeks optimum energy performance and energy management capability using energy efficient design management processes.

EXEED Certified will have a purpose to enable organisations establish a systematic approach to the design, construction and commissioning so as to minimise their energy use and consumption in their operating lifecycles. Such projects may include new, modified and renovated facilities, buildings, equipment, systems and processes.

The principal aim of the Program is to influence and deliver new best practices in energy efficient design management which delivers, verifies and manages optimum energy performance at the earliest stages of the lifecycle. It will provide stakeholders with a mechanism to reduce total lifecycle energy consumption of such projects and assurance of early adoption of the energy management best practice.

This will be achieved through;

- the use of energy management systems standards as the basis for implementing best practice in design projects. EXEED Certified uses energy management system standards I.S.399 and I.S. EN ISO 50001 and energy management guidance standard ISO 50015 for measurement and verification commencing and integrating the energy management discipline at the earliest stages of design
- providing a uniquely branded recognition of achievement using an independent third party certification body for certification of assets
- three (3) distinctions in certification that provide levels of certainty and assurance of sustained energy savings. The EXEED Certified Program will have oversight and ownership by SEAI. Certified Bodies will be invited to participate within the Program to provide certification services, subject to accreditation and auditor competency requirements as specified under the Program

When choosing EXEED, the objective is to strive for the optimum design with operational control that minimises lifecycle carbon and energy impacts.

#### Benefits of EXEED to the Owner/Investor

- Demonstration of CSR (Corporate Social Responsibility) and ESG (Environmental, Social and Corporate Governance) values
- Strong action by an organisation to minimise contribution to climate change
- Strategically addresses lifecycle energy and carbon costs from the design stages

- Drives innovation through R&D – new solutions potentially emerging especially when applied across global investment
- Future-proofing of business
- Opportunity for Ireland operations to demonstrate global leadership and be a centre of excellence
- Provides confidence and trust for business leaders with assurance of asset energy performance.
- Assessment of the multiple benefits of energy efficiency developing a more holistic assessment of benefit.
- Handover of significant technical information and knowledge built during the design process for energy management, typically lost.

### **3.1 EXEED Certified Distinctions**

There are three distinct EXEED Certified categories which are aligned to the design process covering the full spectrum from a delivered energy efficient design to a state where energy performance is being continually improved within an energy management system.

Organisations will have the option of choosing a certification distinction of EXEED in any order that they choose. EXEED Distinctions do not have to be undertaken sequentially.

#### **1. EXEED Designed**

This distinction certifies the asset as designed, constructed, commissioned, and handed over to the owner/operator and actually in operation. The Program requirement for this certification is based primarily on Clause 8 – Operation of I.S.399.

This certificate has a supported life span of 5 years, unless the asset progresses to EXEED Verified or EXEED Managed.

#### **2. EXEED Verified**

This certifies an asset, in operation, against measured and verified energy performance where quantified avoided energy consumption can be substantiated. The additional requirements for this certification are based on ISO 50015.

This Certificate has a life-span of 3 years, unless the asset is re-certified to EXEED Verified or progresses to EXEED Managed.

### 3. EXEED Managed

This distinction certifies the asset in full operational conditions with performance being managed and continually improved within the scope of an ISO 50001 management system.

The additional requirement of this certification is based on ISO 50001.

This Certificate remains supported where ISO 50001 Certification is maintained.

Ideally energy efficient design management commences at the earliest stages of conceptual design. This will provide the greatest opportunity for implementing energy saving opportunities in design with the most attractive financial payback.

However where energy efficient design management does not commence at early design stages – it commences using its current design-state. The same EXEED processes are followed and additional opportunities are implemented in accordance with the business case.

Figure 3.1 illustrates the EXEED Certified processes and distinction available.

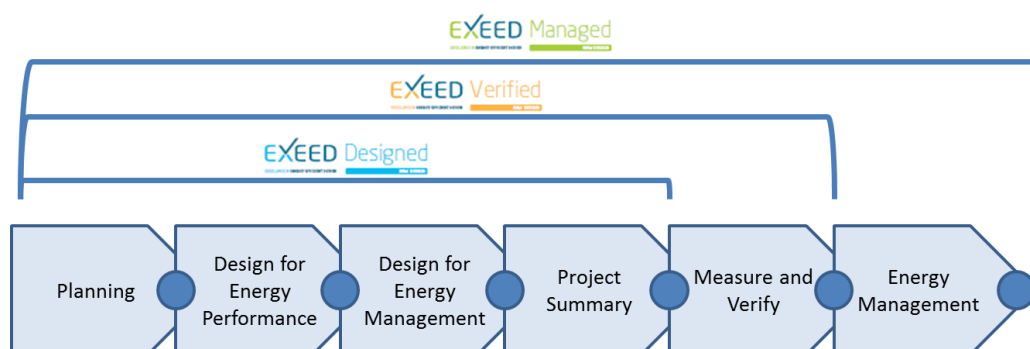


Figure 3.1 EXEED Certified distinctions.

Figure 3.2 illustrates the energy efficient design management processes in the ideal scenario of commencement at conception design. For further explanation of the EXEED Certified process please see an overview in the [EXEED Certified brochure](#) and on the EXEED Certified requirements published on the SEAI website.

Figure 3.2 Illustration of ideal EXEED Certified distinction timing for new investments.

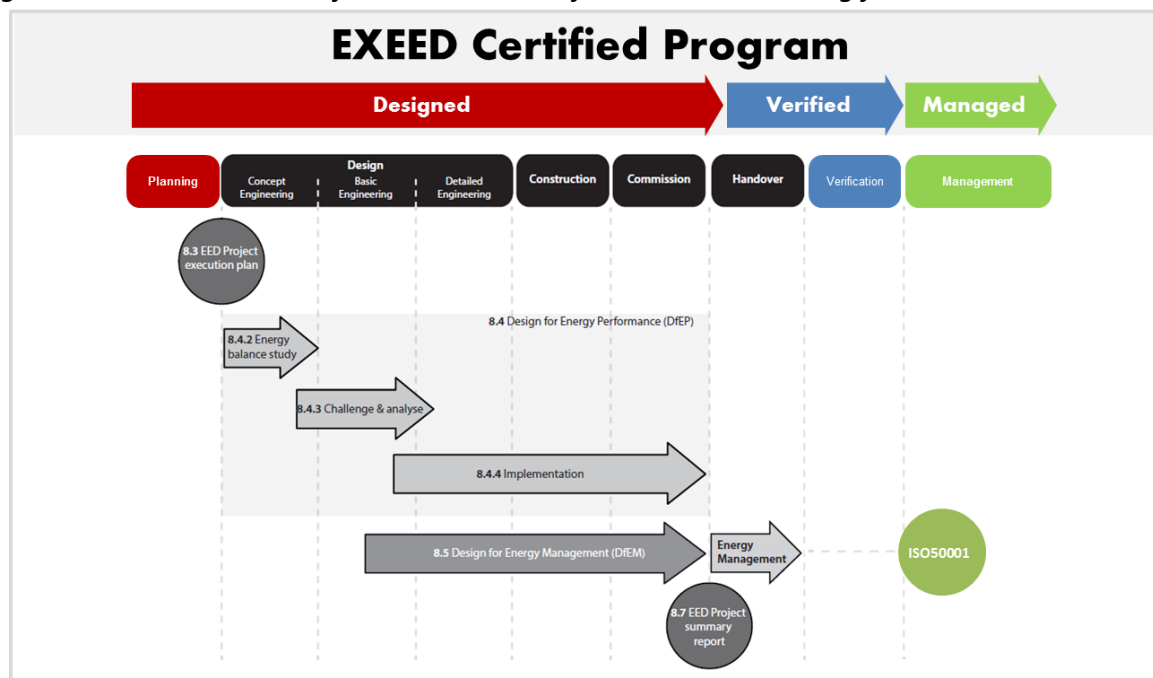


Table 3.1 lists the milestones that make up the EXEED process and the deliverables at each.

EXEED Certified milestones	EXEED Milestone deliverable
Planning for design project	EED Project Execution Plan
Design for Energy Performance (DfEP)	Energy balance study Energy Saving register Project summary report
Design for Energy Management (DfEM)	DfEM within Project summary report Energy variable review Energy performance deterioration review Energy measurement plan
EXEED Certified – Designed	Updated Project Summary Report
EXEED Certified – Verified	Updated Project Summary Report
EXEED Certified – Managed	Updated Project Summary Report

Table 3.1: Outline of the EXEED Certified milestones and the deliverables at each milestone

## 3.2 Energy efficient design case studies

An SEAI Energy Efficient Design methodology was the genesis of the EXEED standard. During these earlier years of development, there were case study projects that demonstrated the potential savings that can be accrued through the implementation of the methodology. These case studies are summarised below in Table 3.2 along with references to their web links.

Company	Project/asset	Annual Impact	Reference
Eli Lilly	New Biotech facility	30%* * 2007, SEAI Industrial Best Practice Initiative Case Study	(1)
Wyeth	Pharmaceutical Development Centre	51%* * 2007, SEAI Industrial Best Practice Initiative Case Study	(1)
Astellas Ireland	Blister Packaging Line	19%* * 2010, SEAI EED Methodology case study	(2)
Nypro	New Cleanroom upgrade project	23%* *2011, SEAI 2010 LIEN Annual report	
Diageo	New Brewery	€2.5M* * 2013, SEAI Energy Awards	(3)

Company	Project/asset	Annual Impact	Reference
Lakeland dairies	Use of pinch analysis in a Dairy manufacturing facility	3.79 GWh	(2)

Table 3.2: Summary of case study applications of the Energy Efficient Design management process to deliver energy reductions for a range of assets.

# EXEED Grant Scheme

## 4 EXEED Grant Scheme

The purpose of the EXEED Grant Scheme is to incentivise and support take-up and utilisation of the EXEED Certified Program to address lifecycle energy performance and energy management of identified asset(s).

The EXEED Grant application process is structured as a two stages process, referred to as Stage-1 and Stage-2. This ensures control and integrity of the EXEED Certified process is maintained in projects and provides necessary grant management structure. SEAI is encouraging earliest applications for Stage-1 and Stage-2. This will enable the most efficient grant management process by SEAI while providing the longest work window for applicants.

It is acknowledged that new Investment Projects the EXEED grant milestones will not align in an ideal fashion. Ensuring the integrity of EXEED Certified implementation is a key objective and outcome for SEAI. Participants will be required to use the Project Execution Planning process to document how the EXEED Grant scheme is planned and accommodated. Some allowances on EXEED Grant milestones are detailed below.

Stage-1 and Stage-2 applications will not be evaluated on a competitive basis following deadline submission dates. Applications will be evaluated as they are received against qualification criterion provided in this document. Projects that are assessed higher than a required minimum quality will be selected.

Funding is limited and will be allocated on a first come first served basis subject to qualification requirements being met.

Subject to continuation of the EXEED Grant scheme in following years, SEAI will accept additional Stage-2 applications to support further energy performance improvement of the EXEED Certified asset in subsequent years, i.e. post first Stage-2 application and payment.

It is hoped that this will encourage enterprises to leverage EXEED Certified as a multi-annual capex strategy to continually improve energy performance. All future applications will be strictly subject to demonstrable continuity in EXEED Certified activity, evaluation criterion and an Incentive Effect.

These projects can submit an application using the Stage-2 Application form.

### Stage-1 Applications.

The EXEED Grant Scheme will be open in March 2017. Stage-1 grant applications can be submitted from the launch date.

SEAI encourages EXEED Certified projects to commence continually throughout the year. There will be no closing date for submission of Stage-1 grant applications. Applications however received later in the year will naturally be subject to constraint in the remaining work window and availability of SEAI budget. Grant commitments cannot be made in 2017



for drawdown in 2018. Grant applications however can be carried over from one year to the next, where a commitment cannot be made in 2017 and then subject to the continuation of the EXEED Grant scheme (discretionary to SEAI) and subject to objectives and changes to evaluation criterion - the application can be processed early 2018.

Projects that submit late Stage-1 applications and receive a Stage-1 letter of offer will still be required to submit a Stage-2 application to make a request for payment in 2017.

#### Stage-2 Applications.

Applications are requested to be received before July 28<sup>th</sup>.

Applications who submit Stage-2 applications later than the 28<sup>th</sup> July date will still be considered but subject to remaining SEAI budget that can be committed and subject to sufficient time for work completion by the scheme deadline.

This milestone is requested to allow sufficient time to complete capital works within the remaining grant window to the project completion deadline. It is acknowledged that the ability of projects to meet this date will depend on the nature, scale and complexity of the project.

It is probable that the nature of large scale design projects, having longer design timeframes, may be limited to non-capital grant support as capital work may not be scheduled to commence or (most likely) the EXEED process determined a lower capital design solution compared to baseline design. In these cases, a Stage-2 grant application is still required to be submitted prior to drawdown of the EXEED grant.

#### Scheme deadline for Request for Payments.

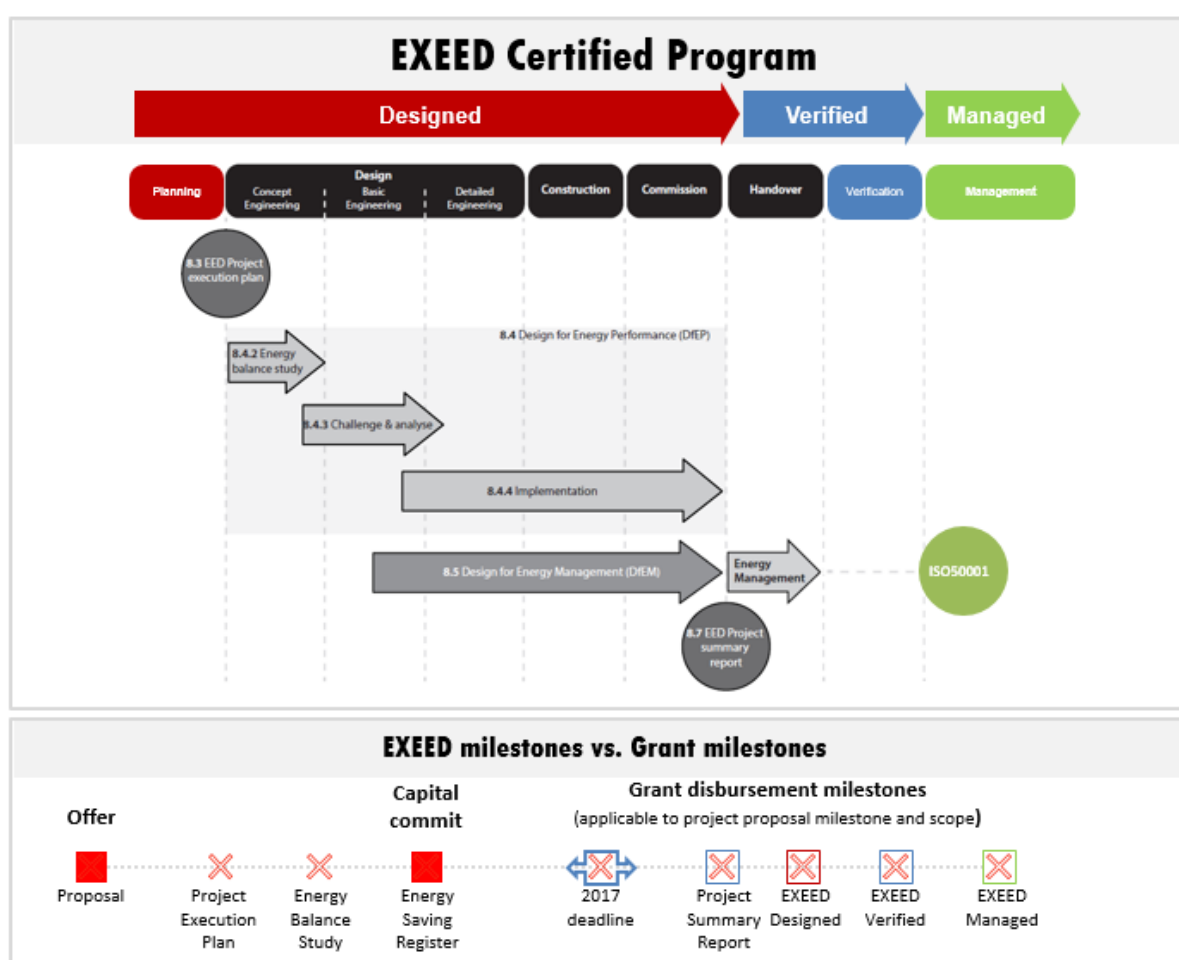
The closing date for receipt for completion of works and submission of final Request for Payment will be October 13<sup>th</sup>.

### **4.1 EXEED Grant support**

EXEED will ideally initiate at the earliest possible stages of a design project where the opportunity has most potential with most attractive return on investment. The EXEED grant scheme will provide grant support for the additional expenditure associated with the implementation of the EXEED Certified process and eligible expenditure for the implementation of those energy performance improvement opportunities that can be completed during 2017. It is expected that projects will have an EXEED Certified timeframe that extends beyond the grant window and it is not a requirement to achieve EXEED Certification within the grant timeframe.

The certification process is made up of several milestones. *Figure 4.1* provides an illustration of how EXEED milestones may align with new design projects. It also shows how the timeframe for the EXEED Grant scheme aligns with the timeframe for EXEED Certified Process. A project will commence application of the EXEED process upon receipt of a Stage-1 grant offer. Eligible expenditure is only that incurred between the grant offer and up to the 2017 deadline date and which is aligned to EXEED milestones. Revision controlled outputs of the Design for Energy Performance and Design for Energy Management stages of EXEED Certified are a requirement as demonstration of following the EXEED management process.

Whether a project advances to the implementation stage depends on the nature, scale and complexity of the project and the time of year the grant application is made.



*Figure 4.1: Illustration of EXEED Certified milestones and EXEED grant scheme milestone alignment for new design projects.*

*Figure 4.2:* illustrates how EXEED milestones may align with major energy upgrade or major renovation projects. The same principles as discussed above apply, with the exception that EXEED Designed is not applicable for re-engineering existing assets. Major energy upgrade

projects are required to aim for EXEED Verified distinction. For these types of projects the asset is an existing entity that is already operational.

Again the timeframe to achieve EXEED Certification can extend beyond the grant window. It is encouraged to adopt a multi-annual approach towards investing in capital opportunities to deliver an asset with optimum energy performance.

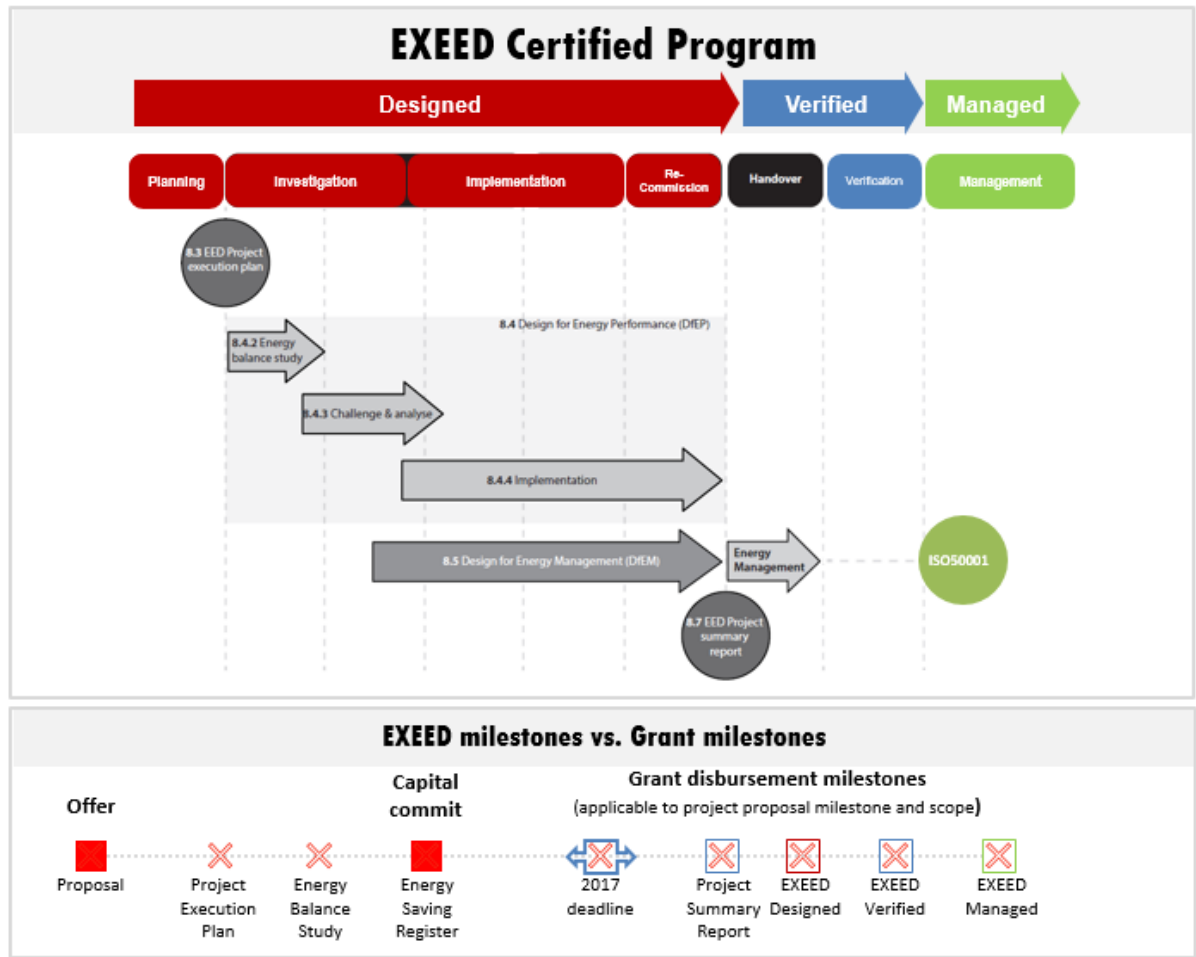


Figure 4.2: Illustration of EXEED Certified milestones and EXEED grant scheme milestone alignment for major energy upgrade or major renovation projects.

There are two application stages in the EXEED Grant Scheme:

- Stage-1 Application: EXEED Certified Project Selection and Approval.

This serves the purpose for SEAI to qualify projects as appropriate for EXEED Certified, suitable for the SEAI grant support and to provide an initial commitment of grant support for the additional expenditure to be incurred to implement EXEED Certified process.

All processes that occur prior to actual implementation of those energy performance improvement opportunities defined by the *Design for Energy Performance* and *Design for Energy Management* processes are eligible for consideration as environmental study.

The expected outcomes in this timeframe are;

- Confirmed commitment to implement EXEED Certified.
- Fully mobilised EXEED organisation and process.
- A finalised *EED Project Execution Plan*.
- Demonstrable evidence of **process-driven** energy performance improvement opportunity identification and prioritisation with revision controlled EXEED documentation to be submitted to next Stage-2.

- Stage-2 Application: EXEED Final Grant offer.

A Stage-2 Application must be submitted and approved before any funding can be drawn down.

The Stage-2 Application serves the purpose to apply and to receive approval for Investment-aid necessary for the implementation of prioritised energy performance improvement opportunities.

The Stage-2 offer will be a final offer and captures all eligible expenditure from project commencement to completion of works in the remaining annual grant window timeframe.

Applicants will have recorded process outcomes in the Energy Saving Register that will be used for assessment by SEAI for capital support. It is expected that a return on investment will take into account the financial return of all opportunities and expected energy savings (i.e., those requiring and not requiring Investment-aid).

The expected outcomes in this timeframe are;

- Re-confirmed commitment to continue EXEED certification.

- Subject to nature scale and complexity of the project, a finalised *Energy Balance Study, Challenge and Analyse* processes and a detailed *Energy Saving Register*.
- Demonstrable evidence of EXEED progress using revision controlled EXEED documentation to be submitted with Request for Payment stages.

Upon approval at Stage-2, a final grant offer will be awarded to support all eligible expenditure including additional capital.

It is important to distinguish that the EXEED Certified Project is expected to have a longer timeframe than that in which the EXEED grant is provided. It is expected that the Energy Saving Register will document the full breath of opportunities. Within this, there will be those energy performance improvement opportunities that will be prioritised as part of the EXEED grant application and those to be implemented, or considered for implementation in future timeframes.

The different stages in the EXEED grant scheme and the deliverables and outputs at each stage are shown in Table 4.1.

EXEED Grant scheme stage	Grant Scheme Deliverables	Output
<b>Stage-1</b>	Stage 1 application form <ul style="list-style-type: none"> <li>- Tax clearance Cert</li> <li>- VAT status confirmation</li> <li>- Financial Declaration form (provided by SEAI)</li> </ul>	Stage 1 Letter of Offer
<b>Stage 2</b>	Stage 2 Grant Application form including revision controlled documents; <ul style="list-style-type: none"> <li>- Project Execution Plan;</li> <li>- Energy Balance Study &amp;</li> <li>- Energy Saving Register</li> </ul>	Stage 2 Letter of Offer (total grant offer)  SEAI evaluation and feedback on demonstrable EXEED process  Note: SEAI comment on EXEED Certified process as part of evaluation will be an input to Certification process.
<b>Request for payment</b>	A schedule of capital works for the purpose of an SEAI inspection outlining the technical details of capital work implemented will be requested at least 4 weeks prior to grant deadline date.  Request for payment documents;; <ul style="list-style-type: none"> <li>- Request for payment form</li> <li>- Invoices</li> <li>- Receipts</li> <li>- Bank statements (as requested)</li> <li>- Grant workbook</li> </ul> Revision controlled documents: <ul style="list-style-type: none"> <li>- Project Execution Plan</li> <li>- Energy Balance Study</li> <li>- Energy Saving Register</li> </ul>	SEAI works inspection  Final Grant payment  SEAI evaluation and feedback on demonstrable EXEED process  Note: SEAI comment on EXEED Certified process as part of evaluation will be an input to Certification process.
<b>EXEED - further grant application(s)</b>	Stage-2 Application form (process to be developed)	To be finalised

Table 4.1: Outline of application stages in the EXEED Grant Scheme, the deliverables at each stage and the subsequent outputs.

## 4.2 SEAI additional support with EXEED Grant Scheme

SEAI undertakes to provide the following support and engagement with the EXEED Certified Projects during and after the grant scheme.

- A mentor will be assigned to provide EXEED mentoring support, EXEED project advice. This mentor will be an external consultant appointed by SEAI.
- EXEED Mentors will also provide reports to SEAI of project development as assurance in delivery of EXEED Certified processes.
- EXEED workshops to develop knowledge and understanding.
- Interaction with participating certification bodies in their development and preparation for certification schemes.
- Development of EXEED guideline materials e.g. case studies of EXEED projects, education material on practical implementation of the EXEED process, tutorials
- Regular communication to enquire about projects progress.
- Evaluation and feedback on EXEED requirements using versions of EXEED documentation at Stage-2 grant application and Request for Payment stage.

## 4.3 Who can apply?

The EXEED grant scheme is open to both the private and public sector of any size.

The grant scheme is applicable to both new design projects and to existing assets having an objective to implement a major energy upgrade or major renovation, and prepared to utilise the energy efficient design management process.

Grant applications are required to be submitted by the organisation who is the investor/owner or operator of the asset. This organisation must take responsibility for getting EXEED Certification of the asset.

Where the Owner is partnering with an Energy Supplier, the energy supplier must provide a separate application to the Energy Efficiency Obligation Scheme and meet the requirements for demonstrable materiality and additionality with greater than a minimal effect. The current process by which partnership with an energy supplier can be achieved and for which the energy supplier can register verified savings as energy credits can be found on the following link <https://www.seai.ie/eeos/>. The strategy to avail of the Energy Efficiency Obligation Scheme and the role of an energy supplier must be documented in the Project Execution Plan.

## 4.4 Eligible projects

The EXEED grant scheme is only eligible for assets that can be EXEED certified. EXEED Certified can only apply to an asset meeting the following qualifications:

- A physical boundary that fully incorporates the system(s) fulfilling its purpose.
- An energy balance accounting for and including all energy sources, energy uses and energy demand.
- Encompasses energy services (i.e. desired outcomes that necessitate the consumption of energy) that are identified with application of the Energy Venn Diagram (c.f 4.4.1).

This programme aims to encourage large scale asset Certification by encouraging a multi-year approach to achieving optimum energy performance. EXEED Certified can however apply to:

- A whole asset
- A sub-asset: provided the sub-asset meets the qualifications for an asset outlined above.

It is a requirement to commit to implementing the EXEED Certified management process.

The designed/re-engineered asset must operate and be located in the Republic of Ireland.

The EXEED process commences upon receipt of a Stage-1 Letter of Offer. Additional support for capital associated with energy performance improvement opportunity is provided by a Stage-2 Letter of Offer.

The Stage-2 application must outline specifically the extent and outline of implementation of energy performance improvement opportunity as they relate to requested grant support within 2017, (e.g. phased implementation, completed and fully operational, capital work completed pending validation and/or commissioning, implementation within constraints of production/availability windows).

It is not a requirement for EXEED Certification within the grant window. The EXEED Certified timeframe can extend beyond the grant deadline date. Grant support will be provided for expenditure that falls within the grant window, as specified in 2017.

Projects assets may include new, modified or renovated facilities, buildings, equipment, systems and processes. Projects can be of any scale or complexity.

Project examples could include:

- Greenfield design
- Brownfield design (repurpose)
- Major Energy upgrade to existing asset – re-engineering and retrospective commissioning
- Major renovation of existing asset



### Examples of eligible project

- Design of new commercial office building.
- Design of new biotech manufacturing facility.
- Design of extension to existing manufacturing facility, including repurpose of warehouse and optimisation of utilities.
- Design of new Data Centre.
- Major energy upgrade of any existing commercial, industrial or public sector buildings/facilities, e.g. shopping centre, shop, hotel, hospital, sports arena.
- Major multi-year phased energy upgrade of manufacturing facility.
- Major renovation and re-purposing of existing commercial or public sector buildings/facilities, e.g. new office building.
- Major renovation of brownfield industrial site, e.g. advance factory.
- Design of new manufacturing facility or production area, e.g., manufacturing area, cleanroom.
- Redesign for repurpose of an existing manufacturing facility or commercial property.
- New design of bespoke manufacturing process or product line
- Production line or bespoke equipment

Additionally, the following eligibility criterion applies;

1. A commitment to EXEED Certified to *any* of the three distinctions, as relevant – Designed, Verified or Managed. Commitment to EXEED certification is a requirement for application and recommitment is a requirement of Stage-2 and the Request for Payment stages.

NOTE: Although a commitment, achieving EXEED Certified during 2017 is not a condition for grant drawdown during 2017. This process can be completed in 2018 or according to nature, scale and complexity of the project requirement.

2. A project is still eligible regardless of whether a design project has already commenced and progressed through any stage of conceptual, basic, detailed or even in construction. In this scenario however, the Baseline design is the current design-state – not an earlier design state.

The Design for Energy Performance (DfEP) and Design for Energy Management (DfEM) commences from the current design-state and same conditions of grant applies to challenge this baseline design.

3. The project may partner with an energy supplier within the Energy Efficiency Obligation Scheme. Under this arrangement, EXEED certification with Verified distinction is a requirement for the energy supplier to benefit from energy credits.

#### 4.4.1 Challenge and analyse

At the *Challenge and analyse* stage, the baseline design is challenged following the principles and order of the Energy Venn Diagram. Energy Performance Improvement ideas are compiled. A number of criteria are used to further analyse each idea and determine Energy Performance Improvement Opportunities from which the list is prioritised. As necessary, these opportunities are further analysed to assess their energy-saving potential and business case for investment.

The Energy Venn Diagram is a way of visualising the factors contributing to energy use, energy efficiency and energy consumption in any system. It is a necessary tool for managing the challenge process and for generating energy saving ideas. Each layer in the Energy Venn Diagram contributes to energy performance. The core is the Energy Service and usually this has the greatest impact on energy performance. The challenge for energy performance improvement should begin here with a detailed challenge in definition of the energy service requirements. The design is then challenged through the Energy Venn Diagram. The layers outside the core usually have a diminishing influence on energy performance. Each significant energy use that makes up the baseline design should be challenged in order of layer of the Energy Venn Diagram. An example of the challenge process applied to HVAC is shown in Appendix 6.

On the SEAI website there are resources that demonstrate the application of the Energy Venn Diagram tool in different sectors. Table 4.2 gives an overview of the resources available.

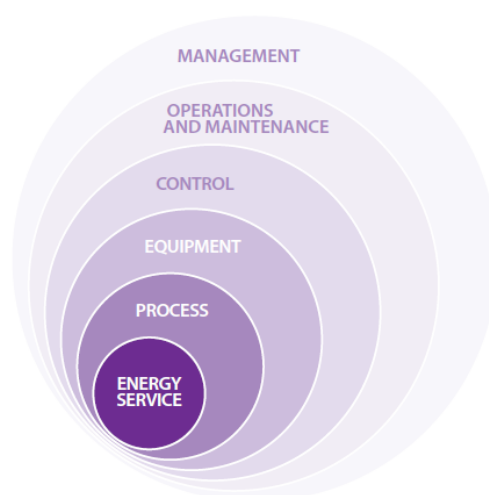


Figure 4.3: Energy Venn diagram

Industry/utility	Reference
Food and Dairy	(4)
HVAC	(5)

Table 4.2: Resources illustrating practical applications of the Energy Venn Diagram tool

## 4.5 Application process and submission requirements

SEAI is currently updating its Project Evaluation Platform to allow applications to be uploaded directly. Until PEP opens all applications should be submitted electronically to [EXEED@SEAI.ie](mailto:EXEED@SEAI.ie) and SEAI will manually upload onto PEP. Once open applications must be uploaded directly to PEP (<https://pep.seai.ie>).

Applicants are requested to submit the following with the application form:

- a) eTAX Clearance: eTax will be verified for the applicants who are required to provide their Tax Registration Number and Tax Clearance Access Number to SEAI for this purpose
- b) VAT status confirmation from the Revenue Commissioner where seeking VAT inclusive costs (see page 31)

A principle of the EXEED Certified process is that the final design outcome can only be derived by application of the energy efficient design management process. The detailed design outcome will therefore not be known at the Stage-1 application point. The EXEED project selection and final grant offer is therefore split into two stages.

Stage-1 and Stage-2 uses two different application forms.

### 1. Stage-1 Application: EXEED Certified Project Selection and Approval

Stage-1 information is provided in the Stage-1 EXEED Application form.

The project is registered with the following key information;

- High-level details of the project, project objectives, project status and project organisation as they relate to the investment project and to EXEED Certified.
- Energy or carbon related objectives and the current strategy of achieving these objectives
- Required deliverables of the project within the SEAI grant window
- Nature, scale and complexity of the project
- Project constraints, risks and opportunities.
- An order of magnitude of anticipated external professional services necessary to implement the EXEED processes.

At Stage-1 the applicant applies for support for the additional professional service expenditure necessary to implement the EXEED management process. Upon approval and grant offer, this will enable the commencement of the EXEED process.

Capital expenditure is not eligible under the Stage-1 grant offer.

## **2. Stage-2 Application: EXEED Final Grant offer.**

The Stage-2 Application is made using the Stage-2 EXEED Application form.

Stage-2 can include request for eligible Investment-aid support for energy performance improvement opportunities arising from the EXEED process and for additional professional services if required for implementation.

The Stage-2 Application will include;

- A statement of progress and outcomes of the EXEED management process already completed or in progress since the issue of Stage-1 letter of offer.
- A detail of all expenditure seeking grant support from SEAI. This includes;
  - Eligible professional services, classified by pre-investment and implementation phases,
  - Eligible capital expenditure.

Ideally, the *Challenge and Analysis* process will be well progressed and a current revision of an Energy Saving Register will be developed and provided with the application.

Stage-2 applications need to be submitted by July 28<sup>th</sup> or anytime earlier than this milestone date.

There are THREE documents that has to be submitted with Stage-2 Application, current revisions of;

1. EED Project Execution Plan
2. Energy Balance Study
3. Energy Saving Register.

SEAI will re-issue the letter of offer based on new details, eligibility and necessary approvals.

### **NOTES:**

**The Stage-2 offer will provide a final grant offer for the project, which includes level of Investment-aid support provided for all professional services and additional capital.**

**The Stage-2 grant offer will supersede the Stage-1 grant offer.**

**Stage-2 Application is a requirement; otherwise Stage-1 offer is revoked. This is included in the terms and conditions of the Stage-1 offer.**

## **4.6 Guidance on completing application forms**

A purpose of the Stage-1 application form is to make a grant request for the additional professional services planned to be incurred to undertake the EXEED process. Capital expenditure shall not be included in the stage 1 application form.

At Stage-1 Application there may be initial high-level energy performance opportunities under consideration. These should be highlighted and it is expected that these can be referenced in the EXEED Project Execution Plan. The intent will be to further investigate these ideas through the Challenge and Analyse phase of EXEED using the guiding principles of the Energy Venn Diagram.

The Stage-1 application form has two main text boxes to be completed. The first text box requests a description of the Investment Project and details of the proposed asset to be EXEED Certified. The second text box requests information about the commitment to EXEED Certified and the intent to apply the EXEED processes to the design project. Please use all the recommended headings when completing these application forms as they are necessary for the evaluation.

The Stage-2 application form has one main text box requesting information relating to the development of the EXEED Project. There is a subsequent table to be populated with details of the energy performance improvement opportunities planned for implementation within the grant window. These details should be a subset of the Energy Saving Register.

Further tables in the Stage-2 application form require the detailed breakdown of EXEED professional services expenditure and the incremental capital costs falling within the grant window.

It is important to note that eligible capital expenditure are only those that are incremental over a baseline design, i.e. over the counterfactual investment achieving same business case but lower levels of energy performance.

It will be required to provide explanation of the incremental nature and the ***Incentive Effect*** of requested investment-aid support. This will be either capital expenditure that is tangible and uniquely identifiable – therefore wholly eligible, or the difference in expenditure with a less expensive counterfactual design, if not tangible or uniquely identifiable. The counterfactual design is not expected to be a detailed costed exercise - however rough order of magnitude that stands up to scrutiny.

In line with the state aid rules of the European Union, as contained in the General Block Exemption Regulation No 651/2014, applicants are required to declare other forms of state aid received. Applicants will be asked to declare this in the Stage-1 application form.

Applicants are also required to declare that they are not classified as the following:

- a limited liability company where more than half of its subscribed share capital has disappeared as a result of accumulated losses ,
- a company where at least some members have unlimited liability for the debt of the company, where more than half of its capital as shown in the company accounts has disappeared as a result of accumulated losses ,
- an undertaking which is subject to collective insolvency proceedings or fulfils the criteria under its domestic law for being placed in collective insolvency proceedings at the request of its creditors,
- an undertaking which has received rescue aid and has not yet reimbursed the loan or terminated the guarantee, or has received restructuring aid and is still subject to a restructuring plan,
- an SME regarding which, for the past two years, it's book debt to equity ratio has been greater than 7.5 and it's EBITDA interest coverage ratio has been below 1.0.

#### **4.7 Level of grant funding**

The EXEED grant scheme will support the additional external professional services and additional capital required to implement and certify the EXEED energy efficient design management processes and asset. The grant intensities are as follows:

- 50% for additional professional services associated with implementation of EXEED processes. These must be directly linked to investments which will lead to environmental protection through energy efficiency and renewable energy.
- 30% for eligible expenditure associated with implementation including:
  - Incremental capital costs compared to counterfactual investment (Baseline design).
  - Professional services associated with implementation

NOTE: SEAI reserves the right to determine the level of grant funding that will be grant aided subject to criteria.

The level of grant intensity may be extended by 20% for small enterprises and 10% for medium enterprises\*\*.

#### **Stage-1 Application:**

There must be appropriate justification and detail included within the Stage-1 Application to support requested scale of grant sought.

Under the European Union's General Block Exemption Regulation on State Aid, the maximum funding a project may receive is €15 million.

#### Stage-2 Application: Grant thresholds

Stage-2 applications when including eligible capital expenditure can increase the requested grant to a maximum of €250,000, subject to availability of funds.

Where capital expenditure is reduced in comparison with the Baseline Design then, there is no eligible capital expenditure.

**The Grant for Phase 1 is payable once the Grantee has submitted a Stage 2 application, and after which on approval, grant drawdown for Stage 1 is possible in accordance with Stage-2 project milestones submitted.**

#### **\*\*NOTE:**

An SME is defined as employing less than 250 persons and which have an annual turnover less than €50M, and/or annual balance sheet less than €43M.

Within an SME category, a Small enterprise employs less than 50 employees and which have an annual turnover and/or balance sheet less than €10M.

SEAI will strictly apply *General Block Exemption Regulations Annex I* as qualifying criteria for an SME.

### **4.8 Eligible expenditure**

Eligible expenditure for grant support are those that only occur after a letter of offer has been issued up to the programme deadline date.

Any additional expenditure directly associated with implementation of EXEED Certified processes are deemed eligible. These are considered additional to the traditional design activity expenditure.

Examples of eligible expenditure below.

Stage-1 Professional services (pre-investment)	Stage-2 Capital investment
<ul style="list-style-type: none"> <li>- External EED Expert</li> <li>- External Subject Matter Expertise (nationally or internationally sourced)</li> <li>- Technical feasibility studies</li> <li>- Engineering exercises/calculations</li> <li>- Additional Engineering Design tasks or services -as specified by EED Expert</li> <li>- Building Information Modelling</li> <li>- Design simulation modelling</li> <li>- Necessary benchmarking studies</li> <li>- Co-energy benefits assessments</li> <li>- Research</li> <li>- Risk management</li> <li>- Applied research, design of experiments</li> <li>- Specialist services</li> </ul>	<ul style="list-style-type: none"> <li>- Additional capital investment compared to baseline design (counterfactual)</li> <li>- Uniquely identifiable energy performance improvement opportunities</li> <li>- Additional metering per EXEED Measurement Plan</li> <li>- Additional design costs charged by specialist suppliers – arising from challenge to design standards</li> <li>- Additional commissioning implementation as necessary</li> </ul> <p><b>Capital – Investment Professional Services</b></p> <ul style="list-style-type: none"> <li>- Implementation costs</li> <li>- Commissioning services</li> <li>- Validation services</li> <li>- Testing</li> <li>- Measurement &amp; Verification additional costs</li> </ul>

#### IMPORTANT NOTES:

- Where SEAI has existing minimum eligibility criteria for building materials, heating or heating controls, or other measures under Better Energy Grant Programmes, these criteria will apply as a default minimum standard...
- VAT can be considered eligible for grant application **only where it cannot be reclaimed.**

If the applicant is looking for a VAT inclusive grant from SEAI, a 2017-dated letter, or letters, from the Revenue Commission confirming the VAT status of the applicant must be included.

The letter must state that the beneficiary is not registered for VAT and/or does not have VAT recovery status on the specific expenditure being claimed, and cannot reclaim any VAT incurred on the project costs.



## 4.9 Ineligible expenditure

- Unrelated costs: any costs not directly related to improving the energy performance of the asset through the proposed project will be considered ineligible for payment
- Internal staff costs: Internal staff costs are not eligible for payment
- Pre-project costs: Any costs that predate formal stage 1 letter of offer will not be paid
- Crossover: Where grant offer was previously awarded for same project within EXEED Grant Scheme or other SEAI programme.
- Baseline costs: The cost of bringing a facility up to national standards required by legislation are not eligible for payment.
- Corrections: The cost of remedying defective works and installations undertaken previously by others (e.g. geothermal remedial works, solar remedial works) are not eligible for payment
- Unexpected: Expenditure that has not been clearly outlined in the Application Form, will be considered ineligible for payment.
- Unfinished works: Project expenditure must be completed to the extent indicated within the project schedule and application form. Expenditure related to unfinished work is not eligible. Project specification changes should also be recorded in the Energy Saving Register.
- Expenses: Expenses, e.g. travel costs, accommodation costs, are not eligible for grant support.
- Spares: The cost of spares will not be supported e.g. spare bulbs

If you are unsure which aspects of your project are eligible for payment, please contact the EXEED team at [exeed@seai.ie](mailto:exeed@seai.ie).

#### **4.10 Evaluation criteria**

The following are considerations of SEAI when evaluating project applications. The objective is to support as many projects as possible within available budget while also to achieving an appropriate mix of project types to demonstrate the breadth of its applicability.

It is expected that projects will be supported on a first come first served basis to facilitate 2017 work windows, however, strict qualification evaluation criteria will apply.

Proposals will require a satisfactory evaluation based on the evaluation criteria outlined below. A minimum qualification score of 60% will apply to be considered for grant offer for both Stage-1 and Stage-2 applications.

#### **NOTES:**

It is necessary to review the EXEED Certification requirements in advance of the application which will be available on the SEAI website.

It is recommended to review the requirements of I.S.399 Energy Efficient Design Management for additional insight.

#### **STAGE-1 Application: EXEED Certified Project Selection and Approval.**

##### **RELEVANCE (40%)**

The project will be assessed in terms of its applicability to the EXEED application, project description, scope, scale, complexity and suitability. The following are high level considerations:

- Asset boundary and project scope is appropriate for EXEED Certified
- Relevance of the project to EXEED grant scheme objectives
- Energy Efficient Design objectives
- EXEED Certified Program with certification requirements is understood and integrated
- Quality, ambition and level of definition of the proposed project
- Scope of project and viability to progress the project within the 2017 timeframe
- Estimated expenditure at appropriate level for scale of project

##### **TOP MANAGEMENT SPONSORSHIP/Commitment to EXEED Certified (30%)**

A critical requirement is the engagement and sponsorship of Top management who are accountable for the project design outcome. The EXEED energy efficient design management process places requirements on the project organisation structure, roles and

processes with Top management accountability. Therefore demonstration of this commitment is a critical element of any application as set out below:

- Level of ambition and organisational commitment towards energy and carbon targets
- Level of engagement, sponsorship and approval of Top management at the application stage to implement the EXEED process in the project.
- The grant Incentive Effect is clear and demonstrated
- Top management commitment in place that sets the organisation objectives and provides the necessary resources to implement the EXEED processes.

### **EXEED CERTIFIED PROJECT SETTING (30%)**

This criterion is an assessment of the demonstrated familiarity and understanding of EXEED Certified, and the outlined proposal to implement the EXEED project including necessary resources:

- Preparation and understanding of the additional project setting necessary to implement the EXEED processes.
- Readiness to commence the EXEED process.
- Description of expected current design-state from where EXEED will commence.
- A general understanding of how the additional organisation structure and processes could be integrated within the project.
- Additional resources (financial and staff) committed to implement the EXEED processes
- Anticipated EXEED activity and anticipated magnitude of eligible expenditure

### **STAGE-2 Application: EXEED CERTIFIED Final Grant offer.**

Stage-2 Evaluation is for the purpose of providing a final grant offer based on all detailed costing and including additional capital support requested.

### **EXEED CERTIFIED PROJECT PROGRESS OUTLINE (50%)**

A high level summary of EXEED Certified progress is provided as structured by the EXEED Programme Application form.

This will include an outline of work achievable during the remaining grant window to be supported by SEAI EXEED grant.

Evaluation criteria include:

- EXEED project integrity with an understanding of the project impact and schedule.
- EXEED additionality experienced and highlighted.
- Highlighting issues encountered in EXEED Certified implementation.
- Understanding of investment decisions, within and planned outside the grant window.
- Approaches defined for Measurement and Verification of opportunities identified.
- Quality of Return on Investment appraisal.
- Value-for-Money assessment for continued support including capital

*Note: Development of an M&V plan is an important part of the Design for Energy Management Stage of EXEED Certified. Where required energy performance measurement and verification methods should be established and recorded in the ESR.*

### **ENERGY PERFORMANCE OPPORTUNITY DEVELOPMENT OUTLINE (50%)**

This section assesses the quality of the EXEED documents and the adherence to the requirements of EXEED. Evaluation criterion include:

- Demonstrated use of Challenge and Analyse process, depth/breadth of challenge and innovation demonstrated
- Project Execution Plan evaluation
- Energy Balance Study evaluation
- Completeness and thoroughness of Energy Saving Register
- The grant Incentive Effect has demonstrated a material increase in the project relating to the projects scope, level expenditure or speed of completion.

**Note:** *The challenge and analyse process is a key stage in the EXEED Certified process. At the core to this is demonstrated application of the Energy Venn Diagram whereby the baseline design is to be challenged against each layer of the Venn Diagram each of which impacts on energy performance. For further information on the use of the Energy Venn Diagram and how it forms the guiding principles of EXEED see Section 4.4.1.*

### **ADDITIONAL COSTS OUTLINE**

Detailed outline of expenditure incurred and planned, based on EXEED progress.

- Professional services
- Additional capital investment from baseline design case.

See section 4.8 for details of eligible expenditure.

#### **4.10.1 EXEED Documents Review**

At Stage-2 and at Request for Payment stage, a review of a projects EXEED documents is undertaken using an evaluation checklist to assess against the requirements of the EXEED standard. This evaluation checklist is presented in Appendix 2. The documents evaluated are

the Project Execution Plan, the Energy Balance Study and the Energy Saving Register. The purpose of the checklist is to;

- To ensure the project is following the EXEED management process
- Assess the quality of the EXEED documents
- To check the specificity of the Project Execution Plan to inform the decisions that will be made during the EXEED process
- The granularity and strength of the Energy Balance Study
- The depth of the Challenge and Analyse phase with application of the Energy Venn Diagram
- The quality of the Energy Saving Register.

## 4.11 Standards and Best Available Technology

### 4.11.1 New design

New design projects have to consider existing directives, regulations or standards that apply as a minimum design standard. One such directive is the Eco-design directive. In these cases, it is expected to adhere to legal requirements, however energy performance considerations have to be considered as part of the EXEED process.

Category	Description of minimum specification
New build, public sector	The <a href="#">Interim NZEB specification</a> for Public Sector buildings sets a performance specification for new buildings owned and occupied by Public Authorities after 31 <sup>st</sup> December 2018.
New build private sector	Non-residential Part L building regulations 2008 Conservation of Fuel and Energy – Buildings other than Dwellings (6) Note: the Interim NZEB specification will form the NZEB requirement in the interim period until the new 2017 Part L for Buildings other than Dwellings takes effect.

Figure 4.3: Outline of regulations and standards applicable to new design projects.

The Eco-design directive came into force in October 2009. The Eco-design directive provides consistent EU-wide rules for improving the environmental performance of products. The Directive sets out minimum mandatory requirements for the energy efficiency of these products. Table 6.1 in Appendix 2 lists the technologies that fall under the Eco-design directive and outlines the key requirements covered for each and their enforcement date. In relation to EXEED Certified and the EXEED Grant scheme there are some points for consideration:

1. The Eco-design requirements address the equipment level of the Energy Venn Diagram. The scope for EXEED Certified is to commence challenge of the baseline design from the energy service requirement level and to work outwards through the Energy Venn Diagram Layers.
2. There are useful benchmarks within the Eco-design directive indicating the best available technology for a given technology at the time of entry into force for the Regulation.
3. For new design projects, where the Eco-design Directive indicates minimum requirements for a given measure, that measure will not be grant aided as it is obliged to be undertaken by the Directive. If it can be demonstrated that the characteristics of the measure are above the Eco-design minimum requirements, then the incremental cost above the requirements can be grant aided.

#### **4.12 Payment procedure**

If approved, a Grant Offer will be issued to the applicant. The Grant Offer will only become valid upon receipt of acceptance of offer through a signed Grant Agreement which must be returned to SEAI within 14 days of date of issue.

The Grant Agreement will detail each of the approved itemised eligible costs and the associated grant amount. The grant payment is limited to these approved itemised eligible costs and if the actual itemised costs that arise in delivering the project exceed the approved itemised costs for any eligible expenditure, the excess will not be eligible for grant payment. SEAI's prior written consent is required for any changes to the itemised eligible costs. For the avoidance of doubt, SEAI reserves the right to refuse such consent at its absolute discretion.

Grant payment will normally be in phases based on completion of key milestones specified in the Grant Agreement. The final payment will be on successful completion of the project.

At the request for payment stage the EXEED deliverables include revision controlled versions of the Project Execution Plan, Energy Balance Study and Energy Saving Register as evidence of progression on the EXEED process. These documents will be evaluated assessed for their progression since the Stage-2 application.

The capital element of the project seeking grant support, if applicable, must be completed and associated final claim for grant payment with supporting financial documentation must be submitted to SEAI by 13 October 2017.

The Grant may be revoked by SEAI if the capital element as detailed in the grant agreement is not completed or a completed payment request form with supporting documentation is not received by 13<sup>th</sup> October 2017.

As mentioned earlier, it is not a requirement for the EXEED Certified Project to be concluded or for Certification to be achieved before the grant deadline date. It is expected in all cases that the EXEED Certified project will have a timeframe that goes beyond the timeframe of the grant.

Grant Payment will be conditional upon satisfactory receipt by SEAI of the following:

- (a) Updated EXEED documents by 13 October 2017 including  
Revision controlled versions of the:
  - a. Project Execution Plan
  - b. Energy Balance Study
  - c. Current revision of the energy saving register;
- (b) Evidence of application and notification to a Certified Body of the existence of the EXEED Project
- (c) A schedule of capital works for the purposes of inspection, submitted to SEAI by 18 August 2017.
- (d) A completed Payment Request Form ;
- (e) A completed Grant Claim Workbook;
- (f) Invoices for all approved itemised eligible costs; Eligible expenditure must be adequately described and broken out in full on invoices
- (g) Proof of Payment of invoices in the form of a statement from the contractor/supplier confirming that the invoice has been paid (invoice number, amount and date paid)
- (h) A copy of the Grantee's bank statement which shows the payments (a copy of the cheque/EFT remittance is required if the bank statement does not include the contractor/supplier name) (where multiple invoices are being paid under a single EFT/ cheque i.e. batch payments) then SEAI requires a breakdown of all amounts comprised in that EFT/ cheque)
- (i) Valid Tax Clearance
- (j) VAT status confirmation from the Revenue Commissioners issued in 2017 where seeking VAT inclusive costs;

On receipt of the required reports and financial documentation by the deadline, and it being confirmed as satisfactory, SEAI will normally transfer the grant payment electronically to the Grantee's bank account and issue an accompanying letter notifying payment to the Grantee.

If unhappy with a decision made by SEAI, the Grantee may appeal the decision by writing to SEAI's Head of Finance and Corporate Services within four weeks of the date of the SEAI decision and providing documentation to support the appeal.

#### 4.12.1 Inspections

The SEAI Inspections Unit will carry out site inspections to ensure compliance with the terms and conditions of the EXEED Programme and the Grant Agreement. Projects are selected for inspection using a risk-based approach.

Where Capital costs are being claimed, a detailed scope of works is required outlining the technical details of capital opportunities being implemented, within the grant window. A template for this scope of works is appended in Appendix 5.

This template is recommended to be completed as soon as possible and returned to SEAI at [EXEED@seai.ie](mailto:EXEED@seai.ie) by 18<sup>th</sup> August 2017. This allows SEAI's Inspection unit to allocate necessary resources for inspection.

As soon as an Inspector has been assigned to the EXEED Project, the Inspector will make contact with the EXEED Owner or their Representative to ensure the Inspections Process is understood.

SEAI should be given regular updates on the intended EXEED Project completion dates. SEAI may seek evidence of the internal quality assurance process undertaken by the EXEED Grantee.

Thereafter, when the works are complete, tested and commissioned and all necessary supporting certification is available, the Grantee will notify SEAI that the works have been completed at [EXEEDInspections@seai.ie](mailto:EXEEDInspections@seai.ie).

Ideally this notification will be given well in advance of the grant deadline 13<sup>th</sup> October 2017.

Relevant certificates to be appended to this notification include:

Testing and Commissioning Reports and final certification for all equipment installed.

Typically, certificates & documentation will be required for:

- Pumps, VSD's, AHU's, lighting, RGI Installer and PV.
- Grid connection licences (Form NC 5 or NC 6) will be required for PV.
- Evidence of CE stamp certificates
- Evidence of Triple E Registration or equal approved, for equipment installed in Public Buildings
- O&M documentation



Commissioning should be undertaken by professional, registered and qualified personnel. The organisation undertaking the commissioning should be clearly stated on the commissioning certificates, together with the name and contact details of the person signing the certificate.

Where there are any doubts as to what an acceptable level of certification is, the EXEED Owner should make contact with their allocated Inspector or email SEAI at [EXEEDInspections@seai.ie](mailto:EXEEDInspections@seai.ie).

EXEED Grantees or their Representatives, must ensure SEAI can access sites for inspection within 7 calendar days of contact being made by the SEAI Inspector.

The EXEED Grantee or their Representative must accompany the SEAI Inspector on site.

Site Inspections will be undertaken during normal working hours.

During the Inspection, the EXEED Grantee or their Representative will be required to provide the Inspector with a safe working environment and suitable access to the project area and works installed. The EXEED Owner or their Representative must notify the inspector of site specific potential hazards.

The EXEED Owner will be asked to retrieve equipment (e.g. light fittings) in areas which are difficult to access, to verify compliance with quality and safety standards.

The representative of the EXEED Grantee should have original versions of certification and documentation to hand and possess as sound technical knowledge of the project to answer questions posed by the Inspector.

Inspection results will be emailed to the EXEED Owner within 7 calendar days of the Inspection, provided all supporting certification and documentation is available.

Where works have not been installed in accordance with relevant standards, SEAI will either identify remedial works (re-works) or decline to pay the grant.

Re-works will be assigned different severity ratings, Severity 1, Severity 2 and Severity 3. Evidence of re-works having been addressed by the EXEED Owner should then be submitted to the Inspector, together with a declaration signed by the EXEED Owner or their Representative, that the re-works have been completed.

Where required, re-works must be completed within 4 weeks of the notification of the results from the first inspection.

Inspection results and severity ratings will inform payment decisions.

Poor inspection results may result in additional inspections being conducted and / or re-inspection of remedial works. SEAI may seek evidence of the quality assurance process undertaken by the EXEED Grantee.

Excessive additional inspections arising from persistent poor quality may be chargeable.

If satisfactory evidence of quality and safety standards is not available, SEAI may, at its discretion, either reduce the grant amount proportionally or decline the grant.

Payments between 50% and 80% must be supported by satisfactory final inspection data on a significant portion of the project. Payments in excess of 80% will only be made when inspection data has been finalised and all outstanding documentation received.

## 5 Terms and conditions

1. The Application Guide, Application Form and Terms and Conditions are those published on the SEAI website on the date of submitting the application. However, SEAI may, if required by law or otherwise and without incurring any liability, vary, revise or supplement the Terms and Conditions of the Programme after the applicant's submission of an application and these revised or supplemented Terms and Conditions (as published on the SEAI website) will apply to the application unless the applicant chooses to withdraw its application or withdraw from the Grant Agreement. The applicant must monitor SEAI's website in order to learn of any such changes to the Terms and Conditions.
2. The applicant's agreement with SEAI in the event of a Grant Offer being accepted will comprise the Grant Agreement, Terms and Conditions of the Programme, the Application Guide (including its Appendices), and the rest of the Application Form. The applicant having accepted the Grant Offer and communicated his/her acceptance of it to SEAI shall comply with and agree to be bound by the provisions of these documents. In the event of any conflict arising between these documents the order of precedence shall be:
  - a. the Grant Agreement
  - b. the Terms and Conditions of the Programme
  - c. the rest of the Application Guide less the Terms and Conditions of the Programme
  - d. the rest of the Application Form less the Terms and Conditions of the Programme.
3. The project, in respect of which the grant application is made, must be located in the Republic of Ireland.
4. Only new products shall be installed for the purposes of the project.
5. A requirement of this EXEED Grant Scheme is to commit to progressing to any EXEED Certified distinction. The expected timeframe for achieving EXEED Certified should be included in the Stage-1 Form, 1.5 Project timeline. SEAI reserves the right to claim back grant payments in the future, where EXEED Certified is not subsequently pursued.
6. EXEED Verified is a requirement for projects involving re-engineering of an existing asset.
7. This Grant Scheme is split into TWO stages of Grant Application and Grant approval. If the Project is selected and approved, it is a requirement to submit a Stage-2 application by the required date, otherwise the initial Stage-1 offer will be revoked.

8. **The Grant for Phase 1 is payable once the Grantee has submitted a Stage 2 application, and after which on approval, grant drawdown for Stage 1 is possible in accordance with Stage-2 project milestones submitted.**
9. The Grant Offer only becomes valid upon receipt by SEAI from the applicant of the signed Grant Agreement which must be returned to SEAI within 14 days of date of issue.
10. The applicant must ensure Grant approval is received before proceeding with any orders, purchases or commencing works. No payments will be made retrospectively for costs incurred prior to approval being granted. Orders placed or invoices dated prior to grant approval will not be eligible for grant support.
11. The grant, once approved, is only payable in respect of the project(s) identified in the Application Form and referenced in the Grant Agreement.
12. SEAI's prior written consent is required to approve any changes to the itemised eligible costs. For the avoidance of doubt, SEAI reserves the right to refuse such consent at its absolute discretion; and
13. The total grant amount will not be permitted to escalate under any circumstances, once approved.
14. The applicant must obtain all necessary consents and statutory approvals and have authority to implement the project.
15. The applicant must ensure that compliance is achieved with the relevant principles of Irish and EC law regarding the spending of this funding and, where applicable, the laws and guidelines concerning State Aid and public procurement.
16. The applicant must be prepared to participate in follow-up site visit(s) to verify impacts and achievements and to participate in follow-up research (telephone or questionnaire) as may be commissioned by SEAI to establish the Programme's impacts and achievements. This will also include the acquisition of information and data for the development of case studies for wider dissemination (protecting as appropriate all confidential or commercially sensitive information/ data). The applicant acknowledges that SEAI will have to provide certain contact details to third party contractors in relation to these matters and the applicant hereby consents to SEAI making these disclosures.
17. The timing of payment to approved applicants is subject to the funding allocated by government to the Programme in a particular calendar year, in accordance with public financial procedures. Where all other conditions are met, payment will be made on a "first come, first served" basis. Where funding is exhausted in a particular calendar year, payment to remaining applicants will be deferred until such time as further funds may become available. Deferred payments will receive priority, if and when those funds become available.

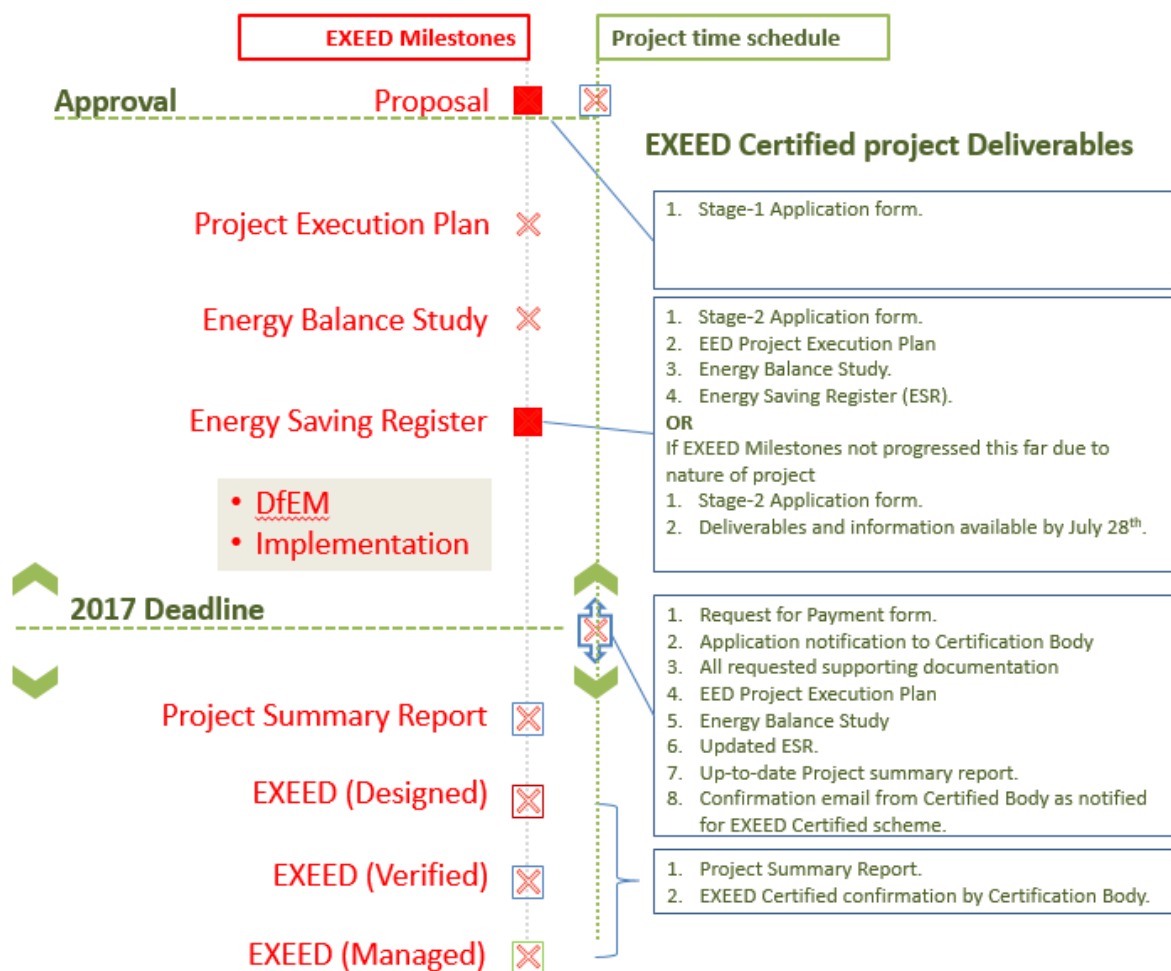
18. The applicant must grant full access to SEAI and its agents to inspect and review the project within **7** days of request for access, save in exceptional circumstances demonstrated to the satisfaction of SEAI. Failure to satisfy this full access requirement will be considered a breach of these Terms and Conditions (see Clause 19 below).
19. SEAI accepts no liability or responsibility, whether for breach of contract, negligence or otherwise, in respect of any direct or indirect loss, expense, dispute, claim, proceedings or cause of action arising out of, or in relation to, any product (or its suitability), any materials (or their suitability), equipment (or its suitability), work, system, service, specification, standard, installation in respect of which a Grant Offer has issued, or grant approval or payment was given by SEAI. No undertaking, guarantee, assurance or other warranty, express or implied, is given by SEAI, or any of its agents or servants, in respect of the cost, quality, efficiency and/or benefit of any work, equipment, materials, product, service or installation provided under the Programme.
20. In the event of any breach of these Terms and Conditions of the Programme or the other documents referred to in Clause 2 above by the applicant and where the applicant has received payment pursuant to the Programme, SEAI shall, amongst its remedies against the applicant, be entitled to demand the complete repayment of and fully claw back the Grant and the applicant agrees to comply with any such demand within one month of the date of the letter from SEAI containing such demand.
21. The applicant shall follow the SEAI complaints procedure in relation to any disputes between the applicant and SEAI concerning any matter in connection with the Programme.
22. Any false, fictitious or fraudulent statements or claims knowingly made on grant applications, or supporting documentation, submitted in respect of previous grant applications / requests for payment or otherwise made to SEAI, its authorised officers, or an SEAI Inspector, or any breach of these Terms and Conditions of the Programme may result in current and future applications being deemed ineligible by SEAI. In respect of applications where the applicant has already received payment pursuant to the Programme, Clause 19 shall also apply.
23. SEAI undertakes to use its best endeavours to hold confidential, any information provided by the applicant subject to its obligations under law, including the Freedom of Information Act 2014 (as amended). Should the applicant wish that any of the information supplied by him/her should not be disclosed because of its sensitivity, he/she should, when providing the information, identify the same and specify the reasons for its sensitivity. SEAI will consult with the applicant about such information before making a decision on any Freedom of Information request received.

24. Any personal information which an applicant volunteers to SEAI will be treated with the highest standards of security and confidentiality, strictly in accordance with the Data Protection Acts, 1988 & 2003. SEAI, as data controller, and its agents, will store such information on its database and fully respect the confidentiality of the data provided. The information provided by applicants will be used for evaluation purposes and to facilitate the administration of the grant process. This may require that data be supplied to and discussed, in confidence, with any person or organisation appointed by SEAI to assist in assessing or monitoring this application. These persons will be subject to the same requirements for protection of confidentiality. The applicant's signature on the Application Form is treated as confirmation that SEAI and its agents may use the information thus supplied for the aforementioned purposes.
25. An applicant is under no direct or indirect obligation to undertake and/or complete its project. Rather, it is up to an applicant whether or not it wishes to undertake and complete its project.
26. An applicant must notify SEAI immediately if it decides not to undertake and/or complete its project. If a successful applicant decides not to undertake and/or complete its project, SEAI will not pay it the grant and instead may (but is not obliged to) allocate some or all of the funds provisionally allocated to that applicant to a different applicant.
27. The parties are of the view that there is no supply of goods or services between them and therefore there is no VAT chargeable to SEAI by the grantee in relation to the payment of the grant. In the event that the Revenue Commissioners determine that, in their view, VAT is chargeable then the grant payment shall be regarded as inclusive of any VAT charge.

## 6 References

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2. —. Energy Efficient Design Special Working Group. [Online] [Cited: 23 2 2017.]  
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[https://www.seai.ie/Your\\_Building/BER/Non\\_Domestic\\_buildings/NZEB-Commercial-and-Public-Sector/Nearly-Zero-Energy-Buildings.html](https://www.seai.ie/Your_Building/BER/Non_Domestic_buildings/NZEB-Commercial-and-Public-Sector/Nearly-Zero-Energy-Buildings.html).
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## Appendix 1 EXEED Grant Scheme timelines






## Appendix 2 Evaluation of EXEED documents

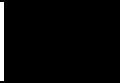
Below is an evaluation checklist used by SEAI for evaluating the EXEED documents submitted with a Stage 2 grant application and a Request for Payment. The checklist is made of the requirements from IS399 for the following EXEED deliverables: Project Execution Plan, Energy Balance Study and Energy Saving Register. The purpose of the evaluation is to check for any non-compliance to the EXEED terms and conditions of the grant, to ensure a project is following the EXEED process and to provide feedback to an applicant on their application of the EXEED process. This evaluation checklist will be provided in report format to the applicant and it is the intent that these evaluation reports will be presented to the Certification body along with the EXEED documents when seeking EXEED Certification for an asset. A traffic light scoring system is used to assess each of the fields. The explanation of the scoring key is given below.

### Scoring guide

	significant non-compliance to EXEED T&C of grant
------------------------------------------------------------------------------------	--------------------------------------------------

Qualitative feedback for EXEED Certification documents	1	Requirement missing
	3	Gap/further information required
	5	Compliant

### Project Execution Plan

EXEED Requirement	Evaluation	
	Score	Feedback
Is it a revision controlled document?		
Is there a clear overview of the project?	1	
An EED project execution plan shall include: a) requirements for design for energy performance and for design for energy management	3	
b) a list of energy efficient design project objectives	5	
c) requirements for energy measurement, monitoring and reporting		
d) project timelines for the delivery of energy efficient design project objectives		

	Evaluation	
EXEED Requirement	Score	Feedback
e) an appropriate schedule of design project reviews focused on energy efficient design		
f) Communication requirements between EED Owner, EED Expert and project design team.		
g) A list of interested parties, their relationship to the design project, their relationship to energy efficient design, and communication requirements		
h) Varying operating conditions that project is likely to experience when operating		
i) Criteria by which significant energy uses are determined		
j) Criteria for selecting energy performance opportunities for implementation		
k) Criteria for measurement and verification of the energy performance of implemented opportunities		
l) A procurement and contracting strategy and how they impact on energy efficient design		
m) A list of identified risks and opportunities related to the design project, implemented opportunities & energy performance including those identified in 6.1		
n) Consideration of national policies or other mechanisms that could support the viability of energy performance opportunities		

### Energy Balance Study report

	Evaluation	
EXEED Requirement	Score	Feedback
Is it a revision controlled document?		
An energy balance report shall be prepared and shall include: a) A list of all energy uses and proposed energy sources	1	
b) Annual energy consumption profile for the project including assumptions	3	

c) Estimate of annual energy consumption costs for the project including assumptions	5	
d) Identification of significant of energy uses for consideration in the challenge and analyse stage		

## Energy Saving Register

EXEED Requirement	Evaluation	
	Score	Feedback
Is it a revision controlled document?		
Design project reviews of the baseline design shall be undertaken for the purpose of identifying energy performance ideas associated with significant energy uses. Design project reviews should include the participation of specialist suppliers where they are associated with significant energy uses.	1	
The significant energy uses shall be challenged in sequence according to the Energy Venn Diagram: energy service, process, equipment, control, commissioning, operations and maintenance, and management.	3	
A preliminary assessment is conducted to select those ideas for further analysis. This analysis shall assess the viability for energy performance opportunities	5	
For opportunities requiring detailed analysis the following shall be included:		
– Energy performance.		
– Co-benefits of energy performance.		
– Economic viability.		
– End user requirements.		
– Practicality of implementation.		
– Risk.		
– Compliance with corporate or legal requirements.		
– Any other criteria established by the organization.		
All ideas and opportunities together with decisions on their acceptance or rejection for implementation shall be recorded in an Energy Savings Register (ESR)		
Where required energy performance Measurement and Verification methods shall be established and recorded in the ESR		

EXEED Requirement	Evaluation	
	Score	Feedback
The EED expert and the EED owner shall establish how these opportunities selected are to be integrated into the design, construction and commissioning project stages		
Actions to mitigate such loss in energy performance shall be defined and documented within the ESR for further analysis.		

## Appendix 3      Eco-design Directive

Table 6.1 lists the technologies included within the scope of the Eco-design directive. See section 4.10 for further explanation.

Item	Measure	Description of requirement	Entry into force
1	<a href="#">Air conditioners and comfort fans</a>	Requirements for minimum energy efficiency, maximum power consumption in off-mode and standby mode and for maximum sound power level	01-Jan-14
2.1	<a href="#">Air heating products</a>	Requirements for minimum seasonal space heating energy efficiency and emissions of nitrogen oxides (where applicable) of: Warm air heaters Air-to-air heat pumps Rooftop heat pumps	1-Jan-2018 1-Jan-2021
2.2	<a href="#">Cooling products</a>	Requirements for seasonal space cooling energy efficiency and emissions of nitrogen oxides (where applicable) of: Air-to-water chillers Water/brine to water chillers Air-to-water comfort chillers Air-to-air air conditioners Rooftop air conditioners	1-Jan-2018 1-Jan-2021
2.3	<a href="#">High temperature process chillers</a>	Requirement for seasonal energy performance ratio.	1-Jan-2018 1-Jan-2021
3	<a href="#">Circulators</a>	Requirements for minimum energy efficiency requirements	01-Aug-15
4	<a href="#">Computer and computer servers</a>	Requirements for: Total annual energy consumption Sleep mode Lowest power state Off mode Internal power supply efficiency Power management enabling	01/07/2014 1-Jan-16
6	<a href="#">Electric motors</a>	Requirements for nominal minimum efficiencies for IE2 and IE3 motors	2009

Item	Measure	Description of requirement	Entry into force
7	<a href="#">External power supplies</a>	Requirements for no-load power consumption and average active efficiency	26-Apr-11
11	<a href="#">Industrial fans</a>	Target energy efficiency	01-Jan-15
12	<a href="#">Lighting products in the domestic and tertiary sectors</a>	Energy efficiency index and functional requirements for directional lamps, LEDs and related equipment.	
13	<a href="#">Local space heaters</a>	Requirements for seasonal space heating energy efficiency and emissions.	01-Jan-18
14	<a href="#">Heaters and water heaters</a>	Requirements for seasonal space heating energy efficiency, sounds levels and emissions of nitrogen oxides of where applicable: Fuel boiler space heaters Type B1 boilers Electric boiler space and combination heaters Cogeneration space heaters Heat pump space and combination heaters Low temperature heat pumps	26-Sep-2015 26-Sep-2017
15	<a href="#">Power transformers</a>	Minimum energy performance or efficiency requirements for medium power and large power transformers.	1-Jul-2015 1-Jul-2021
16.1	<a href="#">Professional refrigerated storage cabinets</a>	Requirements for energy efficiency	1-Jul-2016 1-Jan-2018 1-Jul-2019
16.2	<a href="#">Condensing units</a>	Requirements for energy efficiency	1-Jul-2016 1-Jul-2018
16.3	<a href="#">Process chillers</a>	Requirements for energy efficiency	1-Jul-2016 1-Jul-2018
18	<a href="#">Simple set-top boxes</a>	Requirements for maximum power consumption limits, availability of standby mode and automatic power-down.	04-Feb-2010 4-Feb-2012
19	<a href="#">Solid Fuel Boilers</a>	Requirements for seasonal space heating energy efficiency and emissions.	01-Jan-20
20	<a href="#">Standby and off mode electric power consumption of household and office equipment and network standby</a>	Requirements for electric power consumption in standby and off-mode for electrical and electronic household and office equipment.	17-Dec-2009 17-Dec-2012
22	Use of tolerances in verification procedures		

Item	Measure	Description of requirement	Entry into force
24	<a href="#">Non-residential ventilation units</a>	<p>This regulation applies to ventilation units and establishes eco-design requirements for either placing on the market or putting into service.</p> <p>It defines requirements for:</p> <ul style="list-style-type: none"> <li>-multi-speed drive</li> <li>-heat recovery system</li> <li>-minimum thermal efficiency</li> <li>-minimum fan efficiency</li> <li>-maximum internal specific fan power</li> </ul>	<p>01/01/2016</p> <p>01/01/2018</p>
25	<a href="#">Water pumps</a>	Requirements for minimum efficiency	01-Jan-15

Table 6.1: Eco-design requirements for various non-residential measures and their enforcement date. Click on the hyperlinks embedded into the individual measures to see the more detailed requirements for each measure. Note the Eco-design requirements also reference benchmarks of best available technology at the time of entry into force.

## Appendix 4      Building regulations and NZEB

Nearly Zero-Energy Buildings or NZEB are required under the Energy Performance of Buildings Directive. New buildings owned and occupied by Public Authorities after 31<sup>st</sup> December 2018 must be NZEB and from 31<sup>st</sup> December 2020 all new buildings will be required to be NZEB.

The Interim NZEB Specification for Public Sector buildings sets out a performance specification for new buildings owned and occupied by Public Authorities after 31<sup>st</sup> Dec 2018. It is intended that this specification will form the Nearly Zero Energy Buildings requirement in the interim period until the new 2017 Part L for Buildings other than Dwellings takes effect.

Public Authorities should use this performance specification in the design of all new buildings from the 1<sup>st</sup> January 2017. It is intended that applying this standard from this date will enable all new buildings owned and occupied by Public Authorities after 31<sup>st</sup> Dec 2018 to be Nearly Zero Energy Buildings. The performance parameters for the Interim NZEB specification are shown below in Table 6.2 and compared with the current building regulations, 2008 TGD Part L. The application of the performance parameters specified below will achieve a performance that is in the order of 50 to 60 % better than current requirements.

Element or system	TGD Part L 2008 (6)	Interim NZEB specification Public sector (7)
Total floor area and building volume	Same as actual building	same as actual building
Opening areas	Offices and shops: - windows and pedestrian doors are 40 % of the total area of exposed walls Industrial and storage buildings: Windows and pedestrian doors are 15 % of the total area of exposed walls. Roof lights are 20 % of roof area.	Offices and shops - windows and pedestrian doors are 40 % of the total area of exposed walls
Vehicle access doors	Same area as actual building	
Pedestrian doors	Same area as actual building	
Display windows	Same area as actual building	



Element or system	TGD Part L 2008 (6)	Interim NZEB specification Public sector (7)
Walls	$U=0.27 \text{ W/(m}^2\text{K)}$	$U=0.18 \text{ W/(m}^2\text{K)}$
Roofs	$U=0.16 \text{ W/(m}^2\text{K)}$	$U=0.15 \text{ W/(m}^2\text{K)}$
Floor	$U=0.25 \text{ W/(m}^2\text{K)}$	$U=0.15 \text{ W/(m}^2\text{K)}$
Window U Value Solar energy transmittance Light transmittance	2.2 W/(m <sup>2</sup> K) 0.72 0.76	1.4 W/(m <sup>2</sup> K) 0.40 0.71
Display windows	6.0 W/(m <sup>2</sup> K) 0.72 0.00	
External personnel doors	$U=2.2 \text{ W/(m}^2\text{K)}$	$U=1.6 \text{ W/(m}^2\text{K)}$
Vehicle access and similar large doors	$U=1.5 \text{ W/(m}^2\text{K)}$	$U=1.5 \text{ W/(m}^2\text{K)}$
Effective thermal capacity	External wall = 11.7 kJ/m <sup>2</sup> K Roof = 12.0 kJ/m <sup>2</sup> K Ground floor = 36.0 kJ/m <sup>2</sup> K Internal wall = 11.9 kJ/m <sup>2</sup> K Internal floor = 8.6 kJ/m <sup>2</sup> K Internal ceiling = 8.6 kJ/m <sup>2</sup> K	
Thermal bridging	Add 16 % to fabric heat loss	Actual length of Key junctions x Advanced psi value
Shading and orientation	Same as actual building	
Air permeability	10 m <sup>3</sup> (hr.m <sup>2</sup> )	5 m <sup>3</sup> (hr.m <sup>2</sup> ) Floor ≤ 250 m <sup>2</sup> 3 m <sup>3</sup> (hr.m <sup>2</sup> ) Floor > 250 m <sup>2</sup>
Fuel	Auxiliary energy = grid electricity Cooling = grid electricity DHW = as actual building Space heating = as actual building	
Heating System Coefficient of Performance (SCoP)	Heating only SCoP = 0.73 Mechanical ventilation (no cooling) SCoP = 0.78 Air conditioned SCoP = 0.83	91 % Gas boiler
Cooling Seasonal Energy Efficiency Air conditioned building Ratio (SEER)	SEER=1.67	SEER = 4.5
Cooling (mixed mode)		SSEER = 2.7

Element or system	TGD Part L 2008 (6)	Interim NZEB specification Public sector (7)
Lighting	Office, storage and industrial spaces = divide the illuminance by 100, then multiply by 3.75 W/m <sup>2</sup> per 100 Lux  For other spaces = divide the illuminance appropriate to the activity area by 100, then multiply by 5.2 W/m <sup>2</sup> per 100 lux	65 lm/circuit watt
Occupancy control	Local manual switching	Automated
Daylight control	Local manual switching	Automated
Central ventilation SFP	2 W/(l/s)	1.8 W/(l/s)
Variable speed control of fans and pumps controlled via multiple sensors	No	Yes
Demand control (mechanical ventilation only) Variable speed control of fans via CO <sub>2</sub> sensor		Yes
Renewable energy ratio	None	20 % using photovoltaics

Table 6.2: Comparison of 2008 TGD Part L building regulations with the Interim NZEB Specification for public sector buildings.

## Appendix 5      Inspections Scope of Work template

**EXEED Grant Scheme**

**Project ID Number**

### SITE INSPECTION SHEET

Beneficiary	Facility name	Facility address	Existing Spec	Type of energy upgrade	Proposed spec	Cost of opportunity (excl VAT)	Payback	Energy Savings / kWh	Grant Value	Grant %
			Make & model # of units Power Rating Efficiency Location		Make & model # of units Power Rating Efficiency Location					

## Appendix 6 Challenge process for HVAC

Energy Venn Diagram category	Current design state	Challenge	Opportunity/action arising
Energy Service requirement	Ventilation of an office environment with X air changes per hour to achieve CO <sub>2</sub> levels of X ppm with space temperature of 20 °C	Can the rate of ACPH be reduced?	Reduce ACPH to X
		Can the maximum permitted CO <sub>2</sub> levels be challenged?	Extend the maximum permitted CO <sub>2</sub> level
Process	Mechanical ventilation of air with fixed speed fans in an AHU with air-flow at set m <sup>3</sup> min <sup>-1</sup>	Can natural ventilation be used?	Investigate feasibility of mixed mode ventilation?
		Can heat recovery be used?	Install heat recovery on exhaust
Equipment	AHU, fans, motors, fan drives	Can more efficient motors be used?	Upgrade fan motors to higher efficiency
Control	BMS on/off control	Are the fans variable speed?	Install VSDs on the fan motors?
		Has a dead-band been configured into the control loops?	Set heating to turn off at 19 °C and cooling to come on at 20 °C.
O&M	Bi-monthly inspection of filters	Can the cleanliness of cooling coil be maintained?	Install coiling coil UV lamp
Management	Monthly tracking of bills to monitor energy use through the year	Investigate an M&T system?	Install an M&T system with sub metering of electricity feed to AHUs

Table 6.3: Example of the challenge process for HVAC SEU. Note that this challenge process for HVAC is not exhaustive. Further opportunities relating to HVAC can be found as an output from SEAI's [HVAC Special Working Group – Spin II 2008](#).