4.1

One approach that could be taken here is an approach taken in the USA every 3-4 years called the Commercial Buildings Energy Conservation Survey. This survey is mandated by US DOE organisation act of 1977 and used by EPA’s Energy Star as the basis for Target Finder and the Energy Star ratings system. Clearly this will not be a bullet proof solution, but what will be, and using a consistent approach such as this would allow us to set attainable targets for ourselves, but just as importantly over time be able to track the general improvements that are made.

4.2

To have a rational approach to analysing sectors and breaking down the sectors into consistent data sets. Analysing energy use of industry and industrial buildings will be completely different to standard commercial buildings and should not be attempted. Use of the approach of the ISO50001 standard for large industry could suffice for large industry. Key stakeholders will be the energy suppliers, and energy specialists from organisations such as SEAI EPPSU and recognised Energy professionals with energy analysis experience such as Technical experts with ISO 50001 or Certified Measurement and Verification Professionals to bring some on the ground experience to the desktop analysis of data undertaken.

4.3

Obviously organisations such as Construction Industry Federation (CIF) will have a vested interest to promotion of this area, but they will also have much needed experience to cost various strategies. Banks and organisations expected to finance the initiatives are important as they will need to fully understand and agree with the program to release finance.

5.1

In our opinion an inventory is a critical part of the solution so the default approach should be taken. Otherwise there is no guarantee that the renovation will be targeted at the buildings most appropriately in need of renovation from an energy perspective (taking into account other social and policy needs), in fact it is more than likely certain to happen that renovation will be irrationally driven with continuous question asked and allegations of political input to decisions. This would be unwanted for all.

6.1
We would suggest that all public procurement activities include a simple requirement that persons initiating a purchase indicate whether the energy use of a product/service or goods being purchased are likely to be significant over the lifetime of the product in terms of the cost of operation versus the cost of purchase. They should also be required to sign a declaration that they feel competent to make such decision. Where the energy use over the lifetime is deemed to be significant over its lifetime the tendering entity should be required to submit as part of the tender submission the energy efficiency characteristics of the equipment to be supplied and also the expected cost of ownership based on an expected use to be declared by the tendering body. The awarding body would then be able to take this into account in their MEAT analysis on the basis of cost of ownership. Environmental assessment would not be considered necessary as policies such as carbon tax should have captured the issues relevant to the environmental impacts of the energy use and therefore less clean fuels will cost more.

7.1
Agree

8.1
Essentially we would see that there are a number of relevant existing schemes that can be utilised:
Currently Irish National Accreditation Body INAB has an accreditation scheme in place for ISO 50001 Energy Management Standard that requires energy management certification bodies to use Technical Experts in the assessment of compliance of the organisation to the international standard. Using this approach the Energy Technical expert will review the organisations energy review, register of energy opportunities, operational controls of areas of significant energy use, and energy performance indicators, and deem them to be appropriate in the context of good energy management practices. The management systems certification body is required to satisfy INAB of their competence in this regard and INAB use their own technical experts to validate the quality of the certification body processes in performing witnesses audits which acts as a quality assurance scheme. As such it is recommended that if an organisation is Certified to, and retains certification to ISO 50001 by an INAB accredited certification body (to ISO 50001), then the Energy review undertaken by that organisation should be taken to meet the requirements of the energy audit under this requirement.
Another scheme that exists for training and Certification of Energy Audit professionals is run by the Association of Energy Engineers. Under this scheme, AEE runs in Ireland a number of Certified Energy Professional training courses and examinations, namely the Certified Energy Manager qualification, (CEM), the Certified Energy Auditor qualification, (CEA), and the Certified Measurement and Verification Professional qualification (CMVP). Training is marketed by a number of professional organisations such as SQT Ltd. and Certification Europe Ltd. but all training is under AEE control.

With this scheme the individual needs to undertake a course of training before undertaking the examination. To undertake the course there is a set of criteria that the individual must first meet in terms of education and energy related experience to meet course entry requirements. These entry criteria balance the education and experience requirements so that experience in the energy world with an appropriate lower education qualification can match a higher education with less experience.

On completing the examination the script is marked and passed to the Irish Certification Board which assesses the candidates education, experience versus his/ her course result and decides which (if any) qualifications to award to the individual. This recommendation is then reviewed by the International Certification Board and if agreed then the award is made for a period of three years. The individual is then required every three years to update and validate that qualification by means of continuous professional development and this professional development is ratified again by the Irish Certification Board and submitted for review by international organisation.

The examination script changes regularly (SI units) and only available to AEE approved instructors. The certification board is made up by a majority of persons not involved in the training and the results from all training is assessed regularly at AEE headquarters for any anomalies. There is typically a 60-70% pass rate at training events and unusually high results from courses can potentially be audited by AEE with all records from examinations held for five years. The training us currently operational in 91 countries throughout the world, all continents, including Ireland, UK, Spain, Cyprus, Hungary and shortly Portugal and Italy. The register of certified professional persons is held online and available to all for review. [http://www.aeecenter.org/custom/cpdirectory/index.cfm](http://www.aeecenter.org/custom/cpdirectory/index.cfm)

Filter down to Ireland to see all currently listed professionals.

A scheme such as this can be used to assist Ireland in meeting the requirements.

This scheme could be utilised or adapted, or indeed left open to the market to develop similar competing schemes with higher level
oversight. It must be said that the existing scheme is extremely well recognised throughout the world and indeed that Ireland is very well recognised within AEE. The Irish Chapter has assisted in the development of the UK and Spanish Chapter and also assisted in delivering AEE training to countries including Ireland, UK, Italy, Norway, Luxemburg as well as to many multi-national organisations. It would be suggested that the AEE CEA qualification should qualify for auditing to commercial type buildings, but that CEM would be required for industrial organisations given the more advances skills likely to be required.

8.2 Currently no real auditing framework exists with a large gap between the quality and independence of auditors and companies that offer these services.

8.3 A central registration scheme could be used or alternatively requirement of auditors to register with one of a number of “authorised schemes”. With a wide range of skills and starting qualifications it is difficult to manage the requirement to balance real experience with academic qualifications and the reality that the requirements for auditors change from company to company being audited depending on the nature and scale of their energy use. The use of the existing scheme such as the AEE scheme may be preferable. It would be possible to replicate it but its strength lies in the fact that the assessment is made by peers but with strong oversight from an external organisation as opposed to a box ticking exercise that can easily be manipulated, and the fact that that organisations protects its reputation strongly and cannot afford let ups in quality. AEE would be delighted to work with DCENR in any way on the development of any scheme it required.

8.4 Application process outlining balance between Education and energy experience
Examination that has various levels that takes into account sectoral competencies
Oversight of examination process
Continuous professional development requirements
Register of all qualifies persons.

8.5
AEE Certified Energy Manager qualification should suffice for all required auditors

8.6 Contact details
Sectoral Competence (commercial, process, transport, domestic etc)
Summary Profile
Qualifications
Membership of professional bodies
Details of relevant experience
Agreement to code of practice
Declaration
Agreed compaints and auditing process
Tax clearance
Insurance details – I would consider caution on these. These can change over time between periods of registration and may leave the dept open to action where a body was not compliant when undertaking work, but still on register.

8.7 Minimum qualifications need to be based on an examination of auditing related skills such as CEM or CEA. The problem with other qualification is that it is possible to have a Phd in energy analysis and still not be competent to undertake an energy audit.

8.8 Penalties, after assessment by a body of competent persons, should be removal from the register for a period of time to be set by the review body, and a full review when requesting re-entry that takes into account the previous non-compliance and the output of the previous review body and the reasons for setting the period of removal. Additional training may also be required in the interim period.

9.1 Supply of energy usage information to the end user of the fuel along with some guidance as to how this compares with “similar” type consumers in the case of small scale commercial and residential customers should be sufficient to meet this aim. Potentially in conjunction with details of energy efficiency opportunities and how to pursue them.

9.2 Heat costs in multi apartment building should be on the basis on meters. This will take time to implement but should be rolled out on the basis of the least efficient first. Potentially requiring all multi occupancy
buildings to be classed as public buildings would then require a DEC that could be used to direct what buildings should be prioritised.

9.3
Buildings supplied from district heating network should be required to be fitted with heat meters unless it can be clearly shown that reduction in energy use will only require additional heat to be dumped (eg from CHP). This should of course affect the designation as a high efficiency CHP plant as the heat in this case is not necessarily being appropriately and efficiently used.

14.1
The AEE Certified Professionals Directory for CEM will give a list of persons that will have had some exposure to the requirements for efficient Cogeneration and district heating networks, but this would NOT in any way be regarded as competent CHP or Distributed networks professionals. AEE Irish Chapter could provide to DCENR a list of persons on our data set that have considerable CHP experience that may assist.

14.2
The main barrier to HECHP and efficient District heating networks is essentially the spark-spread, or more particularly its variability, the small population density and the legislation around private networks that limit the use of electricity within building even where multiple buildings exist under common ownership, limiting the return on electricity to wholesale as opposed to retail rates. As a result investments in HECHP only yields marginal returns.

14.3. No comment

15.1 No comment

16.1
The schemes currently provided by Association of Energy Engineers are as follows:

AEE Certified Energy Manager CEM
AEE Certified Measurement and Verification Training
AEE Certified Energy Auditor Training.
These are grouped together for the template as essentially all the training and certification is run under the same process. Reference has already been made in this response and throughout the DCENR document on ISO 50001 and the process by which standards are maintained. It is pointed out here at this stage that both INAB accredited certification providers to the ISO 50001 standard, National Standards Authority of Ireland, NSAI, and Certification Europe have used the Association of Energy Engineers training and certification programs as a means of assuring knowledge and competence in their technical assessment staff that undertake the technical assessment to ISO 50001 in companies applying for certification to the standard.

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<th>Scheme Name: Association of Energy Engineers Certified Professional Programs; Certified Energy Manager, CEM; Certified Measurement and Verification Professional; CMVP Certified Energy Auditor, CEA,</th>
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