COMMENTS ON CHANGES TO THE BUILDING BYE-LAWS .

Summary of responses

The Minister for Environment published notice of his intention to revise the building bye-laws in October 2015, and invited views on proposals to change the energy efficiency requirements of the building bye-laws. The proposals sought to improve the energy performance of buildings in support of the aims and objectives of the States of Jersey Energy Plan – Pathway 2050.

Responses were received from five organisations. A summary of the comments received together with the Minister/department response and outcome, is provided in the following tables.

Table 1: Shows the types of organisation and number of responses received.

Table 2: Provides a summary of the comments received and the department's response to those comments.

April 2016

Table 1: Responses by type of respondent.

Type of Organisation	Number of responses.
Architect	1
House / property developer	1
Specific interest or lobby group	1
Material supplier	1
Other	1
Total	**5**

Table 2: Comments received and response.

No	Respondent	Summary of comments.	Departments response	Minister's decision
1.0	Architect.	Potential for less floor space and increased build costs	Solutions are available that would not impact on usable floor space. See comment 1.1 regarding build costs.	No change.
1.1		Has any work been carried out to establish how much the proposal will add to the build cost of an average 3 bedroom House?	The effect on building costs will depend very much on the design solutions adopted. It is expected that if new technologies and modern methods of construction are adopted any cost increase should be relatively small. Build costs for meeting the higher insulation	No change.

			standards using traditional dense concrete block cavity wall construction are estimated to be between £30 and £40 per square metre of floor area. Fuel cost savings resulting from the improved insulation standards are estimated to be on average £330 per year for a 100m^2 house based on current prices for standard rate electricity.	
1.2		The new standards will cause a shift from traditional to modular construction systems. Is the Island industry geared up for this change?	The vision of the approved energy plan for Jersey is one of a low carbon future so this will have an impact of how we build in future. The industry responded positively to the energy efficiency changes introduced through the bye-laws in 2011 and has shown it can innovate and find solutions that result in energy efficient, low carbon buildings. The aim of this revision to the bye-laws is to continue that progression.	No change.
1.3		At what stage do we consider the potential long-term environmental issues associated with electricity obtained from nuclear industry?	The bye-laws are not prescriptive in terms of the type of energy to be used. The focus is on achieving carbon reduction by improving the energy efficiency of building services, and by reducing demand for space heating through improved building fabric standards.	No change.
1.4		Surely, low carbon standards should form part of a wider package of measures	Agreed. The standards set under the building bye-laws are just one measure. The approved energy plan for Jersey – Pathway 2050 – sets	No change.

			out a framework of policies and supporting actions relating to energy use.	
1.5		New JSAP compliance tool welcomed.	Support noted.	No change.
1.6		The requirement for energy saving improvements to be made to an existing dwelling when an extension to that dwelling is proposed (consequential improvements) may deter general house improvements and add to build costs.	In terms of home improvements an extension represents a significant investment by the householder. The published proposal is for 10% of the costs of that investment to be used to make energy efficiency improvements to the existing house, provided that it is cost effective to do so. Cost effective improvements are those which will provide a payback through reduced fuel costs within 15 years. It is considered most home owners are unlikely to decide not improve their home by adding an extension, simply because of a requirement to carryout energy efficiency improvements that will reduce their household running costs and improve their comfort and wellbeing in the long term. However, it is accepted that the 10% target may be over ambitious in some cases. Also it should be noted that where the existing dwelling already meets the bye-law threshold values for thermal insulation no further improvement would be required.	The proposed requirement for up to 10% of the cost of an extension to be used for making energy efficiency improvements to the existing dwelling is to be changed to not less than 5% of the cost of the extension works.

1.7		Would it not be better to incentivise energy efficiency improvements to existing houses rather than enforce them through 'consequential improvements'	Energy improvement grant schemes aimed at assisting low-income and vulnerable households have been available since 2009. While these have been successful the impact has been limited by the amount of funds available. It is considered that such incentives are not appropriate for the able to pay sector and that much more can be achieved through the mechanism of 'consequential improvements'. Focus group work carried out in support of the Energy Plan[1] has demonstrated that the capital cost of energy efficiency improvements are not necessarily the main limiting factor when considering barriers to the uptake of energy efficiency interventions. Of more concern was access to impartial information to identify the most appropriate measures, establishing the cost of installing any particular measures and estimating the savings to be achieved by the measures. Other issues raised were concerns re the management of the work and the disruption it might cause as well as anxieties on choosing / engaging a trusted competent contractor.	No change.

[1] http://www.gov.je/Government/Pages/StatesReports.aspx?ReportID=1755

			When extension works are planned, the householder has already committed time, money and engaged contractors to carry out works to the home. Thus requiring them to improve the energy performance of their existing dwelling at this time is a natural step. It is therefore argued that this is a more cost-effective policy intervention than simply providing direct grants to people who have already made the time and monetary commitment to improving their properties.	
1.8		The higher efficiency standards prescribed for newly installed controlled services and fittings in both domestic and non-domestic buildings are easier to achieve, although at a higher build cost.	Innovation in the building services sector has resulted in significant improvements in boiler and lighting efficiencies. Fittings such as windows and doors have also improved greatly in recent years and this has simply been reflected in this revision to the bye-laws and follows established trends in the UK building services industry.	No change.
1.9		The move to require the owner to be provided with better information about the building and its fixed building services to enable efficient operation is welcomed and supported.	Support noted.	No change.
1.10		The proposal to revise the energy targets for non-domestic buildings to achieve an average 34% improvement relative to 2011	Experience in the UK has shown that while the proposed standards are challenging they are indeed achievable with modern methods	No change.

		standards and 67% improvement on 2010 standards will increase build costs, has the potential to reduce floor space and will be very challenging and demand rigour.	of construction. Build costs and the effect on floor space will very much depend on the design solutions adopted. See comment 1.1 above.	
1.11		Why are the documents being updated?	The States of Jersey Energy Plan which was approved in 2014 sets out a vision for a low carbon future. It recognises the building bye-laws have an important part to play in improving the energy performance of buildings and gives timescales for updating the building bye-law requirements.	No change.
1.12		Can't conservatory heating provisions be tightened up?	The control of heating in conservatory type extensions is not easily regulated through building bye-laws. This is because space heating can be provided at any time using portable and plug-in heaters. The approach taken in this revision to the bye-laws is to improve the thermal performance of conservatory type extensions. In particular, standards for all glazed elements have been improved from the current minimum U-value of 2.0W/m^2K to 1.6W/m^2K. This should reduce the need for space heating in conservatory extensions. In addition the definition of a conservatory has been retained to distinguish them from 'highly	No change.

			glazed extensions'	
2.0	House / property developer	The proposals seek to achieve a substantial improvement in the energy performance of new homes, while in principle we agree with this; an increase of such magnitude will have a dramatic impact on the local construction industry.	Support for the principle of improving energy performance standards is noted. The proposed changes to the energy performance standards are similar to those introduced by the 2011 changes to the bye-laws, and therefore are expected to have a similar impact on construction methods. The extent of that impact will very much depend on the design solutions adopted, but traditional design solutions combined with higher levels of insulation will still be an option.	No change.
2.1		The impact of the changes are not limited to the construction sector as they have the potential to adversely affect the wider economy in terms of a move away from local manufacturers and suppliers of concrete blocks to off Island suppliers.	The proposed changes will inevitably result in changes to current practice. The extent of that change will depend on a number of factors including the availability of products and materials. It is expected that new business opportunities will follow with existing businesses innovating and providing new services that will support the bye-law aims of improving the energy performance of buildings.	No change.
2.2		The planning process for larger schemes can take a substantial amount of time. The proposed changes to the thermal performance of the building fabric will potentially result in the massing, bulking	It is not considered appropriate to exempt larger schemes from the new standards. However, it is recognised that designers will need time to adapt schemes to meet the proposed changes. A three month notice	3 months' notice to be given of the proposed bye-law changes.

		and footprint of buildings being amended to incorporate additional levels of insulation. There will therefore need to be a period where any live planning applications are exempt from the revised bye-law standards.	period should be given before the bye-law changes take effect to help designers plan for the changes and agree variations with planning officers where necessary. Dimensional changes to existing planning permissions that are solely for the purposes of accommodating the fabric insulation standards called for in this revision to bye-laws will be permitted without the need to submit a revised planning application.	Planning guidance note to be updated.
2.3		We believe the proposed Part 11 requirements conflicts with Planning Policy NR7- renewable energy in new developments. That policy aims to cut carbon emissions by 10%, on top of the building bye-law requirements. Carbon emissions should be dealt with exclusively through the building bye-laws to ensure clarity and avoid overlap or conflict between policies.	Planning Policy NR7 and the Part 11 requirements are both concerned with energy efficiency and the reduction of CO_2 emissions. In that respect there is no conflict between the two. It is accepted that energy performance matters would be better dealt with exclusively through the building bye-laws as the design in terms of energy is generally more advanced at the bye-law application stage. Also, the information needed for bye-law purposes makes the assessment of overall energy performance easier. Using the building bye-laws as a standalone policy for setting energy targets should be considered in the next review of the Island plan. In the interim a case could be made to show compliance with the revised bye-law standards would be sufficient to demonstrate compliance with Policy NR7.	Next review of the Island Plan - Consideration to be given to using the building bye-laws as the sole means of setting energy performance targets for buildings.

2.4		Changing the production of locally produced concrete blocks to make them more thermally efficient could result in their structural properties being reduced. This could affect how a five storey apartment building is constructed. For example, requiring a framed structure with infill panels in place of local concrete blocks. A change such as this that would be detrimental to local suppliers of concrete blocks.	There are a number of design solutions that could be used to meet the proposed standards. The reference dwelling U-value for external walls of 0.18W/m^2K is not prescriptive and may not be the most economic specification in every case. Designers are free to explore the most economic specification to meeting the TER and TFEE rates on a project specific basis. In apartment buildings the area of external wall relative to each flat will be significantly less than that for detached dwellings. This will therefore allow trade-off between fabric standards and building services to reduce insulation levels in the external wall. While the extent of any trade-off is limited to prevent excessive and inappropriate trade-offs, it is permissible to reduce wall U-values from 0.18W/m^2K to 0.30W/m^2K. A cavity wall comprising two dense concrete blocks with a 100mm cavity partially filled with 50mm good quality rigid insulation board would achieve a U-value of approximately 0.26W/m^2K. This U-value could be used as the basis for the design with trade–off elsewhere. Where a design calls for a higher wall U-values and traditional masonry construction is the preferred option, improvements can be made using insulated plasterboard for the internal wall finish.	No change.

2.5		The proposed changes do not seem to take account of the impact on locally sourced aggregate and manufactured products. The use of local manufacturers and suppliers must be championed as an alternative to the importation of raw materials. The social, economic and environmental benefits of using on Island resources far outweigh the use of imported lightweight blocks.	See comment 2.4 above.	No change.
2.6		The proposed 30% improvement in the energy performance of new homes will result in a disproportionate increase in the levels of insulation to current standards. This will mean that, in order to achieve the most cost efficient build methodology, alternative construction methods to those traditionally and extensively used in Jersey will have to be investigated.	The performance of insulation materials have improved significantly in recent years. This coupled with the airtightness standards introduced by the building bye-laws in 2011 has seen a general move to better building specifications and improvement in energy performance standards. Example calculations have been produced using the JSAP tool and these show that the 30% step change is entirely feasible for Jersey. This level of step change is certainly necessary if the ambitious targets set out in the States of Jersey Energy Plan are to be achieved.	No change.
2.7		Changes to construction methods will inevitably impact upon the skills of those currently employed in the industry. More time is required to assess the impact of the changes.	It is accepted that as building standards change, levels of training and skills will need to follow. In terms of the proposed changes to improve insulation standards, established solutions exist that are familiar to the local industry. This will give the industry time to consider more innovative solutions and adapt	No change.

			to changes in building products and materials over a longer period of time.	
2.8		There is a responsibility to use products and materials that suit the skills of the local workforce.	The department has a responsibility to ensure Jersey's building standards keep pace with modern methods of construction. Experience following similar improvements to the bye-law standards in 2011 has shown the local workforce has the necessary skills to adapt to the proposed changes.	No change.
2.8		A move away from construction methods and materials historically and traditionally used on the Island will require alternative skills that will need to be imported until the local workforce is able to adapt /re-train.	Construction methods and material choice does change as building standards improve. While this revision to the bye-laws will require change to current construction practice in terms of providing higher levels of thermal insulation, it will not prevent traditional design solutions using skills currently available being adopted.	No change.
2.9		While larger firms have the capability and resources to invest in re-training of staff, smaller business may not. Should skills not be available clients and contractors will seek to employ from outside the Island, to the detriment of the local workforce.	Noted. See comment 2.8 above.	No change.
2.10		The reduction in carbon emissions from procuring materials on Island should not be ignored when assessing the 'efficiency' of a building. The shipping of materials to the Island is extremely carbon intensive. New technologies and materials will inevitably be	This revision to the bye-laws seeks a level of improvement similar to that introduced in 2011. The current methods for assessing energy performance have been retained with the focus being on increasing levels of thermal insulation and improving efficiency of	No change.

		required to achieve the radical changes proposed and these will need to be sourced from outside of the Island.	building services. As this relies on imported products the impact in terms of shipment of building materials should be negligible.	
2.11		Of course, not all building materials are made locally. However the use of local products should be encouraged by the building bye-laws.	Nothing is proposed that would preclude the use of locally produced construction materials.	No change.
2.12		Any additional cost of complying with the proposed changes will need to be offset. This may result in the uplift of the sale price of dwellings.	See comment 1.1 above.	No change.
2.13		The affordability of units should be considered in terms of the wider social and economic impact that the regulations will have on the Island.	The proposed changes will not only reduce energy use and carbon emissions but will also produce benefits in terms of reduced running costs for the occupier over the lifetime of the building. It is considered that in the long term affordability will be improved in addition to the wellbeing of the resident as a function of living in a more comfortable home.	No change.
2.14		At a time when the Island is seeking to reduce house prices on the open market and provide more social housing at a cost to the taxpayer, the introduction of regulations that increase initial construction costs must be carefully considered.	It is considered the proposals strike a good balance between cost of compliance, improved living standards and Jersey's environmental commitment to reduce green-house gas emissions as set out in the States of Jersey Energy Plan – Pathway 2050.	No change.
2.15		In order to better manage the cost increases, a more sustainable staggered approach to the implementation of these regulations is required.	The proposed uplift in standards is part of an incremental approach to improving energy performance standards. Energy targets for new buildings were first introduced in 2011	No change.

			and this current revision improves those targets in line with action statements as set out in the Energy Plan approved by the States in 2014.	
2.16		It is our opinion that the implementation of the proposed changes, in their current form, would have a significant adverse effect on the construction industry as a whole, and potentially stifle the current resurgence of activity in the industry.	The introduction of the requirement for energy performance calculations for all new buildings in 2011 resulted in a general improvement in design. It is not uncommon to see energy performance calculations for newly constructed buildings that exceed current requirements by 10% or more. In view of this, the proposed strengthening of standards should be achievable without stifling the resurgence of activity in the industry.	No change.
2.17		The proposed 30% improvement in the energy targets for new buildings is an increase that is extremely difficult for the Island's construction industry to achieve in a single action, without causing detrimental harm. While we agree with the need to improve standards to reduce carbon emissions the proposed changes should be introduced incrementally over a steady period of time to allow local manufacturers, suppliers and the workforce to adapt to the changes gradually. We suggest a 10% improvement should be achievable by the industry with little negative impact.	Changes to the energy performance standards are being introduced incrementally over a steady period of time. The last revision in 2011 saw a 20% improvement for dwellings and a 23.5% improvement for non-domestic buildings. The industry responded well to those changes and the new standards were adopted without any concerns being raised. It is considered the new JSAP tool will make it easier for designers to explore cost effective solutions for housing, and this coupled with developments in thermal insulation products and building services in recent years will greatly assist in meeting the proposed uplift in standards. In addition, experience gained in	No change.

			the UK where the proposed standards have been in place for more than two years can be used to Jersey's advantage. Smaller but more frequent changes to the bye-law standards are more likely to have a greater impact on the industry due to lack of certainty and confusion over ever changing standards.	
2.18		Smaller businesses, which make up the majority of the industry, may not have the resources required to fully and properly consider the implications of the proposed changes on their business. They need to be fully informed and their views considered before any changes are implemented.	The department has issued a number of media releases outlining the proposals. Full details have been published on the gov.je website since the beginning of October 2015. In addition, building control surveyors have been available, without the need to make an appointment, to answer questions from building contractors and associated businesses since the publication of the proposals.	No change.
3.0	Building materials supplier.	The regular concrete block product in Jersey is described as a dense concrete block with a specific density of approximately 2000kg/m^3. Changes to building regulations in the UK, together with manual handling considerations, has seen a move to a medium density block of about 1500kg/m^3 with this becoming the 'default' product in the UK. I expect the same forces to grow here and that we will migrate towards this position here in Jersey. I would like the timeframe to achieve the U-value of	There are a number of design solutions that could be used to meet the proposed standards. The reference dwelling U-value for external walls of 0.18W/m^2K is not prescriptive and may not be the most economic specification in every case. As such there is no timeframe to achieve a wall U-value of 0.18W/m^2K. The prescribed limiting U-value for external wall construction of any type is 0.30W/m^2k. Subject to walls achieving that standard designers are free to explore the most economic specification to meeting	No change.

		0.18W/m^2K for walls, as well as the absolute value itself, to be carefully considered to ensure the change does not unnecessarily damage our business or the wider Jersey economy.	the TER and TFEE rates in each case. It should also be remembered that insulation can be provided internally as well as in the cavity, or as part of an insulated external render system when using dense concrete blockwork construction for walls.	
3.1		There is a risk that the increased cost of achieving the new standards using blockwork construction will push designs towards alternative construction methods that incorporate materials imported from off Island. We all need to be mindful of the risk of losing jobs and of the reduced contribution by local companies to the economy, if local production gives way to imported products.	See comment 3.0 above.	No change.
4.0	Jersey Energy Forum	Action statement 2 of the Jersey Energy Plan required a 60% improvement on 2011 targets for newly constructed dwellings and that by 2018 all newly constructed dwellings will be 'low carbon' in respect of space heating. The new proposals, at prima facie, are a reduction in this ambition to a 30% improvement on 2011 standards, and a 50%improvement on 2010. Some of our members are very concerned this is a backwards step so early in the energy plan and would like to see this ambition raised.	Direct comparison between the 2011 energy targets and those proposed by this revision to the bye-laws is difficult. Both the 2011 and the proposed 2016 targets have been set using the UK Government's Standard Assessment Procedure for the Energy Rating of Dwellings (SAP). It should however be noted there are significant differences between the 2005 assessment procedure used for setting the 2011 target, and the 2012 assessment procedure used for setting the 2016 target. The reason for this is to close the	No change.

		The Forum is required to point out where it appears that Jersey may not yet be on the correct pathway to achieve the agreed demand management and carbon reduction emissions, and so we do so here.	performance gap between the energy use as modelled and that which has been reported from buildings in use. SAP 2012 has moved away from an average annual assessment of energy use to a monthly assessment of energy use which allows for seasonal changes in weather. The assessment also accounts for heat losses through party walls and thermal bridges that were previously assumed to be nil. In order to see the full extent of the improvement proposed for new homes reference should be made to the revised fabric standards used to set the 2016 energy and fabric energy efficient targets. The table below illustrates the level of improvement required to the external fabric to meet the new energy targets. The 2016 values for each of the fabric element are significantly improved meaning that on average demand for space heating should be reduced by at least 60%. **Element** | **U-value 2011** | **U-value 2016** Walls | 0.35W/m^2K | 0.18W/m^2K	

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<tr><td></td><td></td><td></td><td><table>
<tr><td>Floors</td><td>0.25W/m^{2}K</td><td>0.13W/m^{2}K</td></tr>
<tr><td>Roofs</td><td>0.16W/m^{2}K</td><td>0.13W/m^{2}K</td></tr>
<tr><td>Windows</td><td>2.00W/m^{2}K</td><td>1.40W/m^{2}K</td></tr>
<tr><td>Air leakage</td><td>10 m^3/m^{2}h @50Pa</td><td>5 m^3/m^{2}h @50Pa</td></tr>
<tr><td>Party wall</td><td>No requirement</td><td>U-value of 0.00 assumed.</td></tr>
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<tr><td>4.1</td><td></td><td>It is understood that the proposals bring Jersey's standards in line with the UK, and as such should be perfectly achievable for the industry in terms of access to materials and suppliers. At the same time it should drive innovation in the sector locally. In view of this the proposals must not be weakened further in respect to new build.</td><td>The proposals will bring the external fabric standards for new buildings in line with those currently required by building regulations in the UK. However, in terms of CO_2 emissions, new buildings built to the standard used for determining Jersey's energy targets will produce significantly less carbon than equivalent buildings in the UK. The reason for this is due to low carbon electricity being used for space heating for the purposes of setting the bye-law energy targets for new buildings. This means that new buildings built to the Jersey reference building standards will produce at least 50 per cent less carbon emissions than an equivalent building conforming to building regulations in the UK.</td><td>No change.</td></tr>
<tr><td>4.2</td><td></td><td>The impact of the reduction from 60% saving on the 2011 targets to the proposed 30% improvement needs to be calculated to show the overall implications for meeting the Energy Plan targets for newly</td><td>See comment 4.0 above. In addition, it should be noted the proposed 2016 reference building uses electricity as the energy source for space heating, whereas the 2011 target energy rate was based on the fuel actually</td><td>No change.</td></tr>
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		constructed dwellings.	used in the dwelling. The effect of this change means the 2016 target will be more demanding for designs using higher carbon fuels, such as oil or gas for space heating. As part of the ongoing review and reporting around the delivery of the Energy Plan, the impact of the new bye-laws will be monitored and compared against the estimated emissions trajectory as given in Action Statement 2 of the Energy Plan.	
4.3		Moving to SAP 2012 as the methodology for energy rating dwellings and the publication of the JSAP tool to help designers demonstrate compliance with the bye-law targets is supported.	Support noted.	
4.4		Some Forum members are concerned that SAP 2012 will provide perverse incentives for the creation of dwellings with hydrocarbon fuels + micro-renewable generation, which is arguably a less efficient route to reducing carbon emissions than using grid electricity in Jersey.	SAP 2012 is simply a methodology for calculating the energy performance of a dwelling. It does this by taking into account the following factors: • Materials used for construction of the dwelling; • Thermal insulation of the fabric; • Air leakage ventilation characteristics of the dwelling, and ventilation equipment;	No change.

			• Efficiency and control of the heating system(s); • Solar gains through openings of the dwelling; • The fuel used to provide space and water heating, ventilation and lighting; • Energy for space cooling, if applicable; • Renewable energy technologies. While the target fabric energy efficiency rate that has been introduced in this revision to the bye-laws will significantly reduce the need for space heating in a dwelling, the aim is still to allow flexibility and choice in the design. In the event that the more costly design option of using hydrocarbon fuels supplemented by micro renewable generation is adopted, the new target fabric energy efficiency standard combined with the improved SAP methodology will still secure a considerable reduction in carbon emissions when compared with 2011 standards.	
4.5		It is the view of some Forum members that the market is unlikely to make decisions solely based on carbon emissions if the	Ongoing monitoring and reporting against the targets set in the Energy Plan will ensure that the impact of this policy intervention will be	No change.

		price for fossil fuel is competitive. If the government is serious about achieving the Energy Plan targets, it is important that government monitors and further intervenes in the market if required to encourage decisions based on carbon emissions.	assessed.	
4.6		Forum members would like clarity on whether or not the JSAP tool could be used to report on the CO_2 emissions associated with new and existing building works.	The JSAP tool produces an energy performance certificate for the dwelling as designed. That certificate shows the estimated CO_2 emissions from energy used for space heating, water heating, ventilation and lighting, less the emissions saved by energy generation technologies.	No change.
4.7		Forum members welcome the proposals in respect of making energy efficiency improvements to existing dwellings at the time building works are proposed. Bearing in mind 29% of Jersey's carbon reduction target is aimed at existing dwellings, it is thought the proposals are an excellent improvement on the currently policy measures.	Support noted.	No change.
4.8		Some Forum members are concerned that the measures in respect of works in connection with existing dwellings will not displace enough carbon in the most efficient manner because they do not incentivise fuel-switching from hydrocarbon fuels to	The proposals in respect of existing dwellings seek to make improvements to the thermal performance of the external fabric when building works are proposed and to improve efficiency of building services to make the building more efficient in terms of energy use.	No change.

		electricity.	This will have the effect of reducing carbon emissions by reducing energy demand and at the same time improve comfort conditions and reduce energy costs for occupiers. Simply switching from high carbon to a low carbon fuel would result in greater carbon savings, but it would not help conserve fuel and power or reduce running costs or improve comfort levels and affordability of energy for the householder. The three goals of the Energy Plan must be kept in mind i.e. secure, affordable and sustainable energy. Reducing energy demand as the metric for the basis of the bye-law improvements contributes to all three objectives whilst maintaining the element of fuel choice for the consumer.	
4.9		While the proposals in respect of 'consequential improvements' being made on extending a dwelling are welcomed, it is unclear what effect the proposed changes to the Permitted Development Orders, might have on the reducing the number of applications for extensions and therefore the opportunity to require 'consequential improvements' to be made.	Support noted. The proposed changes to the planning permitted development Order relate to applications for planning permission only. No change is proposed in respect of the type of works for which building permission is currently required. The requirement for 'consequential improvements' to be made when extending a dwelling, will apply to all extensions, except conservatory type extensions having an internal floor area less than 20sq.m.	No change.
4.10		It is assumed that the proposal for 'consequential improvements' to be made	In 2015 the department issued 104 permissions to construction extensions with a	No change.

		when a dwelling is extended will make a significant contribution. However, there is no forecasting analysis available and some Forum members doubt the scale of carbon savings that will be achieved through this measure.	floor area up to 20sqm, 106 permissions for extensions with a floor area between 20 and 50sq.m and 85 permissions for extensions over 50sq.m. It is estimated that these permissions will result in some 10,000sq.m of floor area. Assuming similar levels of activity each year, a construction cost of £2,000/sq.m and consequential improvements equal to five per cent of the build cost, this would equate to £1m per year being invested in improving the energy efficiency of existing homes. The results of the Home Energy Scheme programme 2009 to 2015 are currently being validated by the Energy Saving Trust UK. This programme only covered a selection of energy efficiency installations (Notably not internal or external solid wall insulation). Nevertheless, some broad data (2009 to 2012) is available that proxy the impact of 'consequential improvements'. Data from the Home Energy Scheme shows that £1.4M of expenditure on the available range of energy efficiency interventions delivered the following savings per annum : • 4GWh of energy saved;	

			• £250,000 in financial savings; • 781 tCO_2. Scaling this to £1M of expenditure from consequential improvements suggests that the following might be saved per annum: • 2.85GWh of energy; • £178,575 in financial savings • 558 tCO_2.	
4.11		Once implemented, the effectiveness of the measures for existing dwellings in practice should be analysed, and used as a basis for making further improvements, say in the next five years or so.	Comment noted.	Effectiveness of measures to be reviewed in five years.
4.12		The proposals in relation to new non-domestic buildings seem reasonable and a marked improvement on current standards. The provision of high quality, high energy efficiency, low carbon commercial and office space is critical for the future competitiveness of the island.	Support noted.	
4.13		The requirement to provide a building log book seems an excellent and important measure.	Support noted.	

4.14		I would like to see a calculation of the expected impact on carbon savings in the Energy Plan from the commercial and business sector.	The carbon savings attributed to the 'commercial and business sector' in the Energy Plan are calculated using the information in Supporting Document B. The Industry and Commercial tab outlines the expected impacts of the interventions. However there is a lack of baseline data such as stock size/build type and turnover for this sector. The lack of baseline information means that the impacts of the building bye-laws, as detailed in the text of the energy plan (page 51-52), are not modelled separately. Instead they are included in the overall anticipated savings from a reduction in energy demand as a result of energy efficiency improvements and behaviour change across the sector. The actual impacts of the building bye-laws will therefore have to be collated from data gathered retrospectively from the JSAP tool. This will also be added to information about the baseline energy use and emissions as gathered from the eco active business programme. It is important to note that the Energy Plan models emissions estimated from fuel import data. Data is not available from end users. It might be possible to construct some assumptions around the composition of the business sector in Jersey e.g. the proportion of retail, hospitality etc but there would be a significant amount of	No change.

			speculation since floor areas, stock turnover and new builds are strongly linked to the economy; we do not consider that this is currently merited.	
4.15		Is it possible to explain, by way of comparison, what might be the likely BREEAM rating of new office buildings built to the new standard. This would help non-specialists better understand the level of ambition now proposed for new builds, and could be a selling point for the quality of new non-domestic buildings in Jersey.	The BREEAM rating is determined by the total number of credits the BREEAM assessment achieves. Credits towards the overall rating are awarded if the building produces lower CO_2 emissions than is permitted under building regulations. The effect of the changes proposed by this revision to the bye-laws simply means credits to improve the BREEAM rating based on CO_2 emissions will be harder to obtain.	No change.
4.16		The effectiveness of the measures for new non-domestic buildings in practice should be analysed, and used as a basis for making further improvements, say in the next five years or so.	Comment noted.	Effectiveness of measures to be reviewed in five years.
4.17		Some Forum members are concerned about the shift in emphasis from carbon savings to energy savings. There are very strong views that the continued use of energy saving rather than carbon saving as the underlying analysis in Jersey is at odds with the UK, Guernsey and other countries, and will not be as effective and efficient at driving down carbon emissions.	Guernsey has not set specific carbon targets for new buildings. Standards in Guernsey are currently based on an elemental approach to design that will not achieve the same level of carbon reduction as is being proposed by this revision to the bye-laws. In terms of UK standards, Jersey's proposed reference building uses low carbon electricity for space heating whereas the UK equivalent uses gas. Due to the carbon emission factor for mains	No change.

			gas being considerably higher than that for electricity in Jersey, Jersey's baseline for setting energy targets will in fact result in greater carbon savings than is currently required for new buildings in Guernsey and the UK.	
4.18		My view as Chair is that on a language level it is disappointing that energy is used as the measure rather than carbon savings. On a technical level the proposed measure however have the potential for a step change in carbon savings and are nevertheless a good step forward.	Comments noted.	No change.
4.19		A methodology should be applied such that forecast savings and actual carbon savings are measured and further ratcheting up of measures in the future considered. These calculations are in my view non-negotiable as otherwise it will be impossible to understand the impact of these measures on the carbon reduction targets in the Energy Plan. The States of Jersey should publish a clear explanatory note.	This will be done as part of the monitoring the targets set out in the Energy Plan.	Performance against the Energy Plan targets to be published as part of the annual reporting on the Energy Plan.
4.20		Ministers should not shy away from communicating this is a carbon saving measure that is critical for implementation of the Energy Plan. We understand that politically this has been difficult in the past, but given the latest advances in climate	Comments noted.	No change.

		science and the clarity with which the world needs to take action, we need strong political leadership about the importance of this issue for Jersey.		
4.21		There is a view that consumers and the construction industry don't recognise carbon and carbon reduction. By focusing on it, and directly measuring it and mandating carbon performance to a standard, we are likely to dramatically improve awareness throughout the island. Indeed it would lead to a much broader recognition in the island of its contribution to global carbon emissions and its responsibility for its share of climate change.	Compliance documents will be modified to clearly show the carbon impact of all new buildings. In the case of non-domestic buildings, a CO_2 comparison will be added to show the level of carbon reduction as a result in changes to building standards since 1992.	Compliance documents to be modified.
4.22		Overall, subject to the points above about getting clearer and more transparent on forecast and actual carbon savings, the proposed measures do seem to represent a step change in the way we build in Jersey, which is an essential step in the right direction.	Support noted.	No change.
4.23		While some would like to go further, we must also be cognisant of giving the industry time to respond, and so the proposed measures do seem like a reasonable step for the next 5 years or so.	Comments noted.	No change.

4.24		I understand there are concerns in the construction industry that these measures will slow down economic growth, put people out of work, and increase the cost of housing for the public. I am not convinced; there are plenty of examples where measures like this create new job and skill opportunities, and where innovative procurement and design processes produce low carbon buildings at no additional cost.	Comments noted.	No change.
4.25		I would urge Ministers to consider the medium terms prospects too, in which the provision of low carbon, high quality buildings will be essential for Jersey's competitiveness and will lead to lower household energy bills.	Comments noted.	No change.
4.26		Whilst it is disappointing that Jersey does not seek to be a leader in zero carbon homes, I understand that this would be difficult given the reliance on the UK for materials, where the current government has rolled back from introducing a zero carbon homes standard from 2016.	The reference buildings that have been used for the purposes of setting the energy targets for new homes and new non-domestic buildings use low carbon electricity for space heating. This will have the effect of producing low carbon buildings.	No change.

4.27		It is important to note that the UK is rarely seen as a leader in energy policy these days and that materials and supplies are readily available across much of Europe. We would encourage Jersey to think more ambitiously and to further test the assumption that the lack of equivalent regulation in the UK means an absence of markets for materials.	Comments noted.	No change.
5.0	Other	The revisions to the building bye-laws (BBL's) are an ideal opportunity for Government to reset the standards to which we build and renovate and, more importantly, align them to the - Pathway 2050 - Energy Plan. The latter, unfortunately, has to be viewed as a missed opportunity.	In terms of meeting the objectives of the Energy Plan it is quite clear the proposed revisions to the bye-laws will make a significant contribution to the aim of achieving low carbon buildings. This is evidenced by the outputs shown on the energy performance certificates produced by the JSAP and SBEM tools. See also comment 4.0 above.	No change.
5.1		With the focus being on Energy and not Carbon, these revised BBL's fall short of what was anticipated when the Energy Plan was launched in 2014.	See comment 4.0 above.	No change.
5.2		The Energy plan is very aspirational but has little 'teeth' to focus delivery on its carbon objectives, particularly compared to the UK which has lesser targets in many areas and much greater policy / legislative support to achieve them. The BBL's are one of the areas where the Jersey Government has the opportunity to drive the carbon	The strengthening of the energy performance targets for all new buildings, together with new requirements for energy saving improvements to be made to existing dwellings when building work is proposed, will make a significant contribution to the aims and objectives of the Energy Plan.	No change.

		reduction objectives set out in the Energy Plan.		
5.3		Reducing a buildings energy usage will have an impact on its carbon output, however, the return on carbon saved per £ of investment will be far greater if the focus was on the use of, and support for, low carbon energy. Installing PV on a roof, which displaces low carbon electricity, would be poor use of that investment. Installing a low carbon heating system that displaces a high carbon fuel would seem to be the sensible choice. It is unfortunate that the revised BBL's fail to give that direction.	A fabric first approach to setting energy performance targets combined with requirements for efficient building services has been adopted for this revision to the bye-laws because it provides the following benefits: • Reduces carbon outputs due to reduced energy demand; • Assists energy affordability and reduces fuel poverty; • Contributes to energy security by reducing energy wastage. It is not the intention of the bye-laws to limit choice on how the prescribed energy targets are met. Indeed, the calculating tools which have been made available to demonstrate compliance provide a high degree of flexibility that will allow designers to develop solutions that best meet the aspirations of their Client.	No change.
5.4		Whilst the 'fabric first' approach is a positive step, the back door has been left open to allow high carbon fuels to be utilised, again	The energy targets have been established using reference buildings with high levels of insulation and low carbon electricity for space	No change.

		increasing the properties carbon output.	heating. If the fuel for space heating is changed to a fuel with a higher carbon output than electricity, additional measures will be required the meet the energy targets. Measures could include improved fabric standards, adding PV provision or installing solar thermal. Whichever solution is adopted carbon emissions will be considerably less than current bye-law standards.	
5.5		The following are missed opportunities to support the energy plan: • Introduce an exemplar low carbon standard for Jersey Homes. • Promote and reward excellence in Low Carbon Homes. • Set measurable low carbon standards from the design through to build and in use. • Train the Jersey industry to the highest levels to meet these objectives.	The points listed fall outside the scope of matters that can be addressed through the building bye-laws. The draft Technical Guidance Document 11.1A does however provide a model design that provides a benchmark for a low carbon home. A 100sq.m home built to that model specification will produce CO_2 emissions of approximately 0.5 tonnes per year. The JSAP tool which will be made freely available, will allow designers to evaluate designs as they progress and to make changes over and above that required to meet the bye-law targets. The JSAP tool also provides measurable outputs to help designers review designs and reduce carbon emissions.	No change.

5.6		The opportunity for Jersey to materially lower its carbon footprint has, once again, been missed. If the States are not going to use the JSAP/SBEM tools to report on the CO_2 emissions associated with new and existing building works because it is an energy based calculation then how will it be possible to demonstrate carbon reduction performance in this sector.	This is not accepted – The energy performance certificates which are produced by the JSAP / SBEM tools clearly show the calculated CO_2 emissions for the building as designed and / or constructed. This data can be collated and monitored.	No change.
5.7		The States of Jersey approved Energy Plan sets out a number of key actions which support the overarching target of an 80% reduction in emissions compared to 1990 levels. Action Statement 2 of that plan states: • By 2014 introduce a low carbon standard to achieve a 60% improvement on 2011 targets for newly constructed dwellings; • By 2018, all newly constructed dwellings will be low carbon in respect of space heating. The published BBL proposals indicate a 30% improvement on 2011 standards and 50% improvement compared to 2010. Is this a missed opportunity and what will the consequential longer term impact to delivering the objective targets set out within the Energy Plan?	See comment 4.0 above.	No change.

5.8		If the BBL's are intended to achieve a 30% reduction in carbon emissions, how will the 60% low carbon target set out in the Energy Plan for Jersey be achieved?	See comments 4.0 to 4.2 above.	No change.
5.9		The new BBL's make no reference or definition of what constitutes a low carbon dwelling.	The Energy Plan uses the average carbon emissions from an oil or gas heated home in 2010 as c.5 tCO_2/year; this is considered a high carbon home. Approximately half the homes (51%) in Jersey are heated by electricity whose carbon emissions, for the purposes of Kyoto Accounting, are zero as the country of origin/production (in this case, France) accounts for these. The Building Bye laws however take a different approach and use an emissions factor for local electricity which is based on the three prior years as a rolling average. They then calculate the carbon emissions from these homes, albeit that the French authorities account for this number in their inventory. Using this methodology, the proposed building bye-laws show that a new $100m^2$ two bedroomed, detached home built to the standard of the reference building values and heated with electricity will emit 0.52 t/CO_2/ year; this is considered a low-carbon building.	No change.

			Conversely a similar oil and solar thermally heated home will emit 1.23 t/CO_2 per year 75% better than a previously built average hydrocarbon home (c.5t/CO_2/year).	
5.10		The consultation Part 11.1A document is based on a reference dwelling for which values are set out in Table 3. That reference dwelling includes electric direct acting panel heaters on the standard domestic tariff. Will this reference building therefore achieve compliance under the new standards? i.e. no further improvement will be necessary for this model dwelling.	Yes. That is correct.	No change.
5.11		Is the reference dwelling described in Table 3 of the Technical Guidance Document 11.1A the same as the one used in the JSAP tool?	Yes. That is correct.	No change.
5.12		If the data contained in Table 3 of the Technical Guidance Document 11.1A was entered into the JSAP tool, would this lead to a 'pass' in respect of meeting the Criterion 1 requirement of meeting the bye-law targets for energy and fabric energy efficiency rates.	Yes. That is correct.	No change.
5.13		CO_2 emissions are ignored completely in the proposed Building Bye-laws except by the consequence of saving energy which	Because CO_2 emissions are directly related to the amount and type of energy used, emissions will be limited to the target energy	No change.

		will lower CO_2 emissions. Therefore, you can achieve a Criterion 1 pass regardless of the level of CO_2 emissions.	rate (kWh/m^2) multiplied by the carbon emission factor for the fuels used.	
5.14		The CO_2 emission factor for all fuels should be individually detailed on the EPC.	The purpose of the energy performance certificate is to provide basic energy performance information to the householder. This includes an estimate of the total CO_2 emissions in tonnes per year. Listing individual CO_2 emission factors for each fuel would introduce a level of complexity that was never intended. It is considered the cost/benefit of making this change to the JSAP tool would not be justified at this time. However, the fuel emission factors used in the JSAP compliance tool will be published in the technical guidance.	CO_2 emission factors to be listed in the approved technical guidance.
5.15		The energy performance certificate provides two rating scales, one relates to energy costs and the other to environmental impact. These should reflect the local energy and CO_2 mix and be adjusted accordingly.	The two rating scales have been adjusted to reflect Jersey fuel costs and energy mix.	No change.
5.16		Given the detailed level of knowledge and understanding of building fabric and services required to complete JSAP, will building control require JSAP users to be accredited, as it is the case in the UK.	Persons using the JSAP tool will need some expertise in the SAP methodology. Third party accreditation demonstrating competency in the SAP methodology would therefore be encouraged. As SAP calculations will form part of the information needed with an application for building permission these will	No change.

			be subject to the normal verification process. As such third party accreditation for people submitting SAP calculations will remain optional.	
5.17		The proposed Jersey SAP tool is a much more complicated and sophisticated procedure. The UK requires all SAP/ EPC's to be carried out by fully trained and accredited Energy Assessors, where SAP assessments are subject to a rigorous QA system in order to ensure consistency and accuracy of the SAP assessments.	Experience in the UK shows that while the accuracy of the SAP assessments is important, it is equally important that SAP inputs reflect the final build specification on site. There is strong evidence in the UK of a performance gap between energy use as modelled and energy use in the as-built construction. One of the reasons for this is that changes during the construction process are not always accurately reported to the SAP assessor meaning the SAP assessor is not able to provide accurate as-built SAP assessments. The requirement to notify the department at key stages of the construction process places the building control surveyor in the ideal position to verify both the SAP inputs and the on-site construction.	No change.
5.18		What will be the proposed SAP training, accreditation and quality assurance arrangement associated with the submission of Part 11.1A 2016 applications using the Jersey SAP tool?	See comments 5.16 and 5.17 above.	No change.
5.19		Could the proposed Jersey SAP tool reporting be expanded so that the complete SAP worksheet can be scrutinised, opening	The tool has been designed to produce a series of output documents that allows all key inputs to be scrutinised, including the items	No change.

		areas to be summarised, automatic thermal bridging linear lengths to be summed for sills, jambs and lintels, etc	mentioned. There are no plans at this time to extend this to include the full SAP worksheet.	
5.20		Are the UK Primary Energy Factors appropriate for Jersey and are they included in the Jersey SAP? Sap 2012 document, Table 12 details the following PEF's: LPG -1.09 Oil – 1.10 Electricity – 3.07 It is important that the Jersey Dwelling Energy Rate (DER) is derived from the delivered energy not primary energy.	Primary energy is used for the purposes of reporting the estimated energy use on the energy performance certificate only. It is not used for compliance purposes. The TER and DER is calculated using energy consumed for space heating, water heating, ventilation and lighting. The SAP 2012 Primary Energy Factors for LPG and Oil are considered appropriate for Jersey and have been used in the JSAP tool. The Primary Energy Factor for electricity has been changed to reflect the supply in Jersey with a factor of 1.4 being used.	No change.
5.21		No indication is given as to when fuel tariffs were taken and how frequently they will be updated. How often will JSAP be reviewed and updated and what is the process for making amendments to JSAP, once it is launched.	Fuel tariffs were taken in 2014 from the jerseyfuelwatch.com website. These will be updated when the new bye-laws come into effect and updated annually thereafter.	Fuels tariffs in JSAP tool to be updated.
5.22		How would JSAP manage a fuel tariff change during the project life?	Fuel costs are not relevant to achieving compliance with the energy targets and as such it is not envisaged these will change during the project life. Fuel costs are simply	No change.

			provided on the energy performance certificate to help raise awareness of energy matters and allow house buyers to make informed choices when considering buying a new home. It is intended that fuel costs will be updated on an annual basis.	
5.23		Will building control allow the direct inputting of relevant fuel costs at the time of completing the JSAP? This will enable more accurate and informed information to be passed onto the homeowner and periodically refreshed based on project timelines.	See comment 5.22 above. In order to ensure consistency and accuracy in the reporting of fuel costs the direct inputting of fuel costs will not be allowed.	No change.
5.24		The gas fuel tariff displayed (12.58p/kWh) looks like it is taken form the September 2014 Gas Tariffs. These tariffs are exclusive of GST and the displayed electricity tariff (14.5p/kWh) is inclusive of GST.	Fuel tariffs will be changed to ensure consistency with the application of GST.	Fuel tariffs to be updated with GST applied consistently.
5.25		The gas fuel tariff displayed uses the lower rate of a two rate tariff. The lower rate applies to a usage of more than 54.79 units per day, or 4931 units per quarter. The usage is reset quarterly and therefore is not an annual average figure. It is an unrealistic assumption for a modern home to use more than 54.79 units per day in each of the four billing quarters.	It is accepted that perhaps only larger homes would trigger the lower rate in the coldest quarters of the year, and therefore it would be more appropriate to use the higher of the two rates for the purposes of reporting estimated fuel costs.	Fuel costs for gas to be changed to the higher rate of the two rate tariff.

5.26		The JSAP tool gives two prices for electric comfort heat. 7.95p/kWh for off-peak use and 12.53p/kWh for on-peak use. The JEC have a three rate tariff as follows: Rate 1: 14.5p per unit for heating between 7am and 11pm. (inclusive of GST) Rate 2: 10.77p per unit for heating during 11pm & 7am using JEC non- approved appliances. (inclusive of GST) Rate 3: 7.95p per unit for approved space heating on a dedicated supply for 4 hours between midnight and 7am, two hours between 10am and 5pm and two hours between 7pm and midnight. (inclusive of GST). How has the 12.53p price been calculated and what are the assumptions?	It is not possible to use all 3 tariff tiers explicitly without significant changes to the SAP methodology, so an average of two of them has been taken. The 12.53p price has been calculated as 0.471 x Rate 1 + 0.529 x Rate 2. These ratios were chosen to be consistent with the figures used for the current Jersey SAP calculator.	No change.
5.27		When an electric flow boiler, air / ground source heat pump or electric underfloor heating is installed, the JEC's recommended tariff will be Economy 20. JSAP does not allow any other heating solution, other than a CPSU to be placed on the E20 tariff.	A CPSU's (central heating system with thermal store providing both space and domestic water heating) ability to store heat is what makes this tariff appropriate – i.e. it can store enough heat to get through the off-periods without any loss of heating output to the occupants. The alternative systems suggested would not usually have any storage capability, so are not judged to be appropriate for this tariff for the UK-wide SAP. The UK-wide SAP is based on an 18-hour tariff (with three 2-hour off periods); so it could be argued this is less of an issue for the 20-	Fuel costs are reported for information purposes and are not material to achieving compliance with the bye-law energy targets. However, to better reflect the tariffs

			hour tariff offered by Jersey electricity. To change this assumption would require further work, e.g. to ascertain whether the same on/off peak fractions used for storage heaters could also be used for other heating types, and then some software development work to implement	available consideration will be given to implementing this change as part of the future development of the JSAP tool.
5.28		What is the oil tariff calculation methodology? (ppl, GST, delivery quantity and conversion factor)	The oil tariff was based on average price (inclusive of GST) per litre of the 3 Jersey suppliers for a 500 litre delivery (using prices from 15th Jan 2015). A conversion factor of 10.35 kWh/litre was used, which was taken from the UK Occupancy Assessment methodology.	Fuel prices to be updated at implementation of bye-law changes and reviewed annually thereafter.
5.29		Does JSAP take account of pumps and associated equipment operating on a range of different tariffs when making an assessment of running costs?	Energy used for pumps and fans is accounted for in the JSAP calculation and the relevant fuel tariff applied.	No change.
5.30		The renewable products classification in the UK (OFGEM) recognises air / ground source heat pumps as a renewable technology. Will this apply in Jersey?	Energy used by air / ground source heat pumps is accounted for in accordance with the SAP 2012 methodology.	No change
5.31		There is a SAP conventions group chaired by the representatives of the UK Government which issues detailed	Guidance issued by the SAP conventions group will be taken into account when interpreting the guidance given in the SAP	No change

		guidance on SAP conventions not covered by the SAP 2012 document.	2012 manual.	
5.32		How does/will JSAP cater for bi-valiant heating systems?	The assessor adds a second main heating system and sets the appropriate fractions of heat from each system. This isn't perfect because it relies on the assessor too much, but is the same as is done in other parts of the UK at present. The BRE is looking at ways to improve this in the next version of SAP, but this is some way off.	No change
5.33		The guidance given in the technical guidance document 11.1B relating to controlled services uses words like 'reasonable', 'significantly less' and 'consideration'. How will evaluation of this process be carried out and to what standard?	The technical guidance will be applied in the context it is written by the building control team. Should there be any dispute regarding the interpretation of the technical guidance a request can be made in the first instance for the matter to be reviewed by the director. In the event that agreement is not reached a formal appeal can be lodged in accordance with the planning and building law.	No change

5.34		Paragraph 3.26 of the technical guidance document 11.1B states that 'when replacing an existing appliance, the efficiency of the new appliance should not be significantly less than the efficiency of the appliance being replaced'. In this context, what would be defined as significant: A storage heater @100% changed to a gas boiler at 90%, or an ASHP with a COP of 250% replaced with an oil boiler at 95%?	Paragraph 3.26 refers the user to the Domestic Building Services Compliance Guide (DBSCG) which is one of a set of second tier guidance documents approved for the purposes of demonstrating compliance with the bye-law requirements. That document defines 'should not be significantly less' as follows: Where the primary heating appliance is replaced by one using the same fuel or energy supply, the seasonal efficiency of the new equipment should be: a. As stated in the relevant fuel-based section of DBSCG. b. Not worse than 2 percentage points lower than the seasonal efficiency of the controlled service being replaced. If the new heating appliance uses a different fuel, the efficiency of the new service should be multiplied by the ratio of the carbon dioxide emission factor of the fuel used in the service being replaced to that of the fuel used in the new service, to obtain the 'carbon equivalent efficiency'. The checks described in sub-paragraphs (a) and (b) above should then be made.	No change

			Example calculation for the first case given would be as follows: Electric storage heater @ 100% efficiency replaced with gas boiler which is 90% efficient. a. From table 2 of the DBSCG a gas boiler requires a SEDBUK 2009 seasonal efficiency not less than 88% b. A carbon equivalent efficiency not less than 98% Carbon equivalent efficiency in this case is: 88% x (0.101÷ 0.241) = 36.88% where 0.101 and 0.241kgCO_2 / kWh are the emission factors for electricity and gas fuels respectively. As condition (b) above is not met, this option falls short of the standard required. In the case of the ASHP being replaced with oil boiler which is 95% efficient, this would not satisfy the bye-law requirement because a carbon equivalent efficiency of 248% would not be achieved.	
5.35		Paragraph 3.28 of the technical guidance document 11.1B states that when replacing a heating appliance, consideration should be given to connecting to any existing local heat networks. Local heat network	To some extent this provision future proofs the technical guidance. It is difficult to see why it adds another level of complexity to the bye-laws when the guidance only applies in the event that a local heat network exists.	No change

		technology is some distance off in the Jersey context and this simply adds another level of complexity into the bye-laws.		
5.36		Paragraph 3.30 of the technical guidance document 11.1B refers to commissioning of fixed building services. This is identified as a key area. What administrative methods will be employed to make this notification process efficient and achievable for local installers?	Detailed guidance on what is required in relation to the commissioning of building services is set out in the relevant technical guidance documents. In most cases this is just following the appliance manufacturers' instructions for commissioning. In terms of the required notification process copies of the completed commissioning certificates simply need to be sent to the department at completion of the works. This can be done via email.	No change
5.37		We have the following questions around the 'simple payback' calculation: • Is the cost of employing a 'suitably qualified person' to confirm the cost included in the marginal additional cost?	The marginal additional cost is the additional cost (materials and labour) of incorporating for example additional insulation. It does not include costs associated with producing 'simple payback' calculations	No change
		• JSAP does not allow for specific tariff introduction at the time of carrying out the payback assessment.	That is correct. The primary purpose of the JSAP tool is to demonstrate compliance with the target energy rates set under the bye-laws. In terms of payback calculations the tool can be used to show the energy savings in kWhs of any measures proposed as part of a payback assessment. Energy prices current at the time the payback	

			assessment is undertaken will need to be applied separately to the calculated energy savings to determine the payback period.	
		• Define what is meant by a 'suitably qualified person'	A 'suitability qualified person' means any person with the necessary experience, knowledge and competence in producing such calculations.	
		• Is it correct that the annual energy savings should be estimated using SAP 2012?	In most cases it is expected that energy savings would be estimated using the JSAP tool. The guidance given in the TGD however is not prescriptive and there may well be other equally suitable ways of calculating energy savings.	
5.38		There appears to be no facility to import /export JSAP files. This would be useful when sharing design and building information between Architects, Surveyors and Builders etc.	Currently the tool does not have an export facility. The output documents are however produced in PDF to allow sharing via email.	No change
5.39		Can building control provide a set of model compliant buildings (plans and construction details etc) to help demonstrate routes to compliance?	Example calculations showing compliant solutions for dwellings fitted with oil and electric space heating systems will be made available in the JSAP tool.	JSAP tool to be updated to show example calculations.
5.40		When showing annual running costs the EPC should include the following for each fuel; 1. Calculated kWh 2. CO_2 emission factors 3. Fuel cost used (p/kWh)	The purpose of the EPC is to provide a simple mechanism for home purchasers to compare the performance of newly constructed dwellings. It does this by providing an energy cost rating, an environmental impact rating and information on estimated energy use and	Technical guidance to be updated as required.

		4. Breakdown of emissions per fuel type. 5. Breakdown of fuel usage per energy use (Heating -Oil kWh, Electricity kWh etc) 6. Date and source of fuel prices 7. Efficiency of the heating source or appliance (Boiler, ASHP, panel heater etc)	fuel costs. While some of the items listed are included on the EPC it is not considered appropriate to include all of the items as this would unnecessarily complicate the information provided. It is suggested that the information listed under items 1 to 7 is made available as follows: **Item 1:** Calculated kWh to be shown on the EPC. **Item 2**: CO_2 emissions factors for all fuel types to be listed in the approved technical guidance document 11.1B. **Item 3:** Total fuel cost for each fuel type used in EPC calculation to be shown on the EPC. **Item 4:** Total CO_2 emissions for all fuel types to be stated on EPC. **Item 5:** Total amount of energy used will be stated on the EPC. Further development work would be required to break this down to each fuel type. The cost / benefits of doing this work are not justified for the purposes of the building bye-laws. **Item 6:** The fuel prices used for the purposes of producing the EPC are displayed on the EPC. Fuel prices are taken from the jerseyfuelwatch.com website and will be updated annually in July.	

			Item 7: Efficiency of the heating source is given in the JSAP output documents which can be read in conjunction with the EPC.	