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| **Submission for the Creation of a New Activity or Amendment of an Existing Activity under the ESI Scheme** | |
| **Applicant details** | |
| Date of submission | 11/12/2015 |
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| **Summary of proposal**  Watts Clever is an international brand and company operating in Asia, Australasia, and Europe. We have extensive experience on developing energy efficiency products and implementing energy efficiency programmes for government and utility company initiatives.  Well over 1 million homes have had Watts Clever energy saving and energy monitoring products installed in the UK and Australia alone.  **Summary & Key Points**  Our feedback on the applications for Amendments of an Existing Activity applies to Schedule 34 (In Home Displays) and can be summarised as follows:   1. The existing abatement levels given to schedule 34 do not reflect the true energy savings that are achieved with real time stand-alone IHD’s. The energy saving factor should be increased to 9.0% from 6.6% to reflect more closely the actual energy savings achieved, whilst still remaining conservative. 2. The underlying energy savings calculations used to provide the current abatement levels are based on significantly out of date data and reports. An extremely conservative energy saving figure was used to arrive at the current abatements levels, both these factors are now severely restricting the installation level in the VEEC scheme due to the inaccurate abatement levels. 3. All the evidence from existing trials and pilots shows that real-time feedback on energy usage from an IHD monitor in the house is the most effective educational method for consumers to understand and reduce their electricity use and cost. 4. Web based portals and mobile device apps should not be afforded the same abatement levels as standalone real time displays as there is conclusive evidence that they do not translate into the same level of energy savings. 5. The concerns of the ECODEV and ESC regarding schedule 34 being high risk and open to rorting and installation fraud are unfounded, inconsistence, and cannot be justified. Any concerns can be addressed and the appropriate steps put in place during the installation process to ensure this activity is undertaken within the Regulations.   The 1.3% of Victorian households that have been able to benefit from the installation of the Watts Clever In Home Display have seen significant benefits. This is clear to us from the level of engagement we receive directly from households who are using the IHD, users are extremely enthusiastic about using the IHD to understand and reduce their energy consumption, even using it as a tool to see how effective their new solar system is in producing electricity.  Unfortunately, most households are not able to experience these benefits, the reason being that there is just not enough financial incentive for installation companies to install the IHD as a stand-alone installation. Most of our customers use the IHD as a marketing tool to engage the householder to install other products. This clearly demonstrates acceptance of the benefits of the product on the part of the home owner.  We propose the abatement levels for schedule 34 are increased to reflect the true energy savings and to bring it into line with other activities in terms of the methodology used to arrive at the abatement level.  The following information will cover the reasons and facts why this should be the case. | |
| **Category of proposed activity** | Activity 30: In-Home Displays |
| **Confidentiality statement MUST BE COMPLETED** | In lodging this submission, Watts Clever acknowledge the Department's right to engage consultants and contractors to assist in the assessment process, and to disclose information (that might otherwise be identified as confidential by a party) to such persons for those purposes.  This submission is not confidential. |
| **Briefly describe new or amended activity**  Maximum 100 words. | The current regulations for the IHD activity are well written and well thought out. The product requirements are thorough and ensure a high quality, accurate product is required. We propose 2 changes only, supported by information in this submission:   1. Increase the energy saving to 9% for IHDs that have a specific monitor display to show the energy use details in real time. 2. Either exclude web based and mobile portals or keep the VEEC level as is for these devices, all of the studies have shown these have a lower energy saving than the IHDs with a separate standalone display. |
| **Estimate the average annual energy savings for an average installation of that activity** | One of the latest, most up to date and thorough research reports into the benefits of IHD’s in reducing household energy consumption was provided by VaasaETT and is entitled:  **Assessing the Use and Value of Energy Monitors in Great Britain**  The full report can be found at: <http://www.vaasaett.com/wp-content/uploads/2014/04/assessing_the_use_and_value_of_energy_monitors_in_great_britain-2.pdf>  This report utilised information from a database of over 110 consumption feedback programmes from around the world. The main quantitative analysis used six British and European programmes, containing 65 sub pilots and representing over 28,000 participants. A further six British studies, including research from three British utilities, were used for qualitative data.  This report provides the most comprehensive and up to date analysis of information from various feedback programmes and pilots around the world. Additionally, providing very detailed and specific information about the impact of IHD’s on energy savings as opposed to other technologies such as web portals and mobile device applications.  The key findings from this report can be summarised as follows:   1. Average results from the trials show electricity savings from the use of all types IHD’s are 9% per year for at least three years. This is based on an average of pilots using IHD’s only and IHD’s combined with other feedback channels. 2. Where real time IHD’s were used in isolation the savings were on average 11.31% based on normalised data for sample size variations. 3. Consumption reduction is highest for IHD’s that provide real time feedback as opposed to feedback from web portals and mobile devices. A glance as a household member walks in or out of the kitchen for example is enough to show that consumption is higher than normal or desired, as opposed to having to actively visit a web portal or an app on a mobile device. 4. The typical annual household consumption in the UK that the report is based on is 3800kWh/year. On the basis of higher annual household consumption in Victoria we would expect a higher level and percentage of energy savings to be realised.   The report itself provides full analysis and references to the above information.  On the basis of the above the current energy savings level used for calculation in schedule 34 is too conservative and too low resulting in an abatement factor that does not allow the true energy saving benefits of the schedule to be realised.  The typical annual household consumption in the UK from which the report data is gained is based on is 3800kWh/year. On the basis of higher annual household consumption in Victoria we would expect a higher level and percentage of energy savings to be realised due to the higher incentive and ability to save, further quantifying the conservative nature of a 9% energy saving assumption.  The studies used by Accenture in the original report support the new evidence of the conservative energy saving as 9% when the near real time IHDs are used with an opt in approach, which is the case for VEET scheme.  There were 19 trials that were opt in trials that tested real time IHD or web portal and excluded additional technology, the average energy saving was 8.8%. Plus, a further 13 trials testing real time IHD or web portal excluding trials with time of use pricing comparisons and excluding trials in which consumers were reminded to use the device also had an average of 8.8%. In addition, the Accenture report pointed out that “VassaETT’s finding was that where IHDs gave the customer up-to-date (or near real-time, see Section #4.3.1) consumption data as well as an indication of the likely cost of their electricity and the ability to compare their current consumption with prior periods, average consumption savings rose to 10%.” This is the case with the IHD activity in the VEET scheme.  Of the trails accepted by Accenture the 2 with the lowest energy savings were both opt out studies, the VEET scheme is an opt in scheme, which would question why these studies were included. In addition, the Massachusetts feedback trial, which also had extremely low energy savings, encountered an IHD with serious technical failures and defects that hampered its ability to drive customer savings and included 24% of customers that did not even install the device. The Accenture report states that the removal or addition of 1 or two trials has little affect, however already 3 of the lowest energy saving trials should be removed. Taking into consideration the new evidence of 28,000 participants across 110 studies, showing an average energy saving of 11.31%, where real time IHD’s were used in isolation, the suggested saving level of 9% is still very conservative. The 9% saving is more realistic and will allow more people to benefit from understanding their usage and seeing where the can save.  A factor that further reinforces the conservative nature of the energy saving figures is in what type of dwelling the installation takes place; a house or a unit/apartment. The vast majority of IHD installations will take place in a house for the following reasons:   1. In apartments and multiple units, the electricity meters are grouped together in the basement or in a separate room on each floor. It is not possible regardless of the transmission protocols (Zigbee, RF) for this to work in most of the dwellings in the block as they are too far away from the meter. 2. Generally, the meters are in a locked cupboard and the residents have no access to the key; nor do the energy retailers; so it is not possible to attempt an installation.   On the basis that the majority of installations are in a house then the energy savings will be greater than what has been used in our calculations. This is because the energy use in a house is much greater than in an apartment or unit; this is clearly shown below in the figures from the ABS in 2015.    **Recommended new abatement levels**  The following calculations are for the installation of an IHD in a Victorian household. We use the existing split between households with access to reticulated gas, and households without access to reticulated gas. The proposed Greenhouse gas coefficient has been used in these calculations, as it is due to come into effect January 2016. We have used what we have shown to be a conservative figure of 9% for the energy saving achieved for using an IHD.  **Households with access to reticulated gas**  **Estimated annual and lifetime savings achieved**  **Input Data/Assumptions**   |  | | --- | | 5,882 | | 9.0% | | 5 | | 100% |   Annual Household Electricity Consumption (kWh /yr)  Percentage Reduction in Household Consumption due to IHD (%)  Average Lifetime of IHD (yrs)  Discount Factor (% of benefit attributable to VEET)  **Calculation**  Estimated electricity saving per annum (kWh /yr) for installing an IHD  = 5,882 x 9.0%  = 529.4  Estimated lifetime electricity savings (kWh)  = 529.4 x 5  = 2,647  Estimated lifetime electricity saving (kWh) taking into account the discount factor  = 2,647 x 100%  = 2,647  **Estimated number of VEET certificates**  **Calculation**  To calculate estimated lifetime greenhouse abatement, lifetime electricity savings are multiplied by the standard VEET greenhouse coefficients.  Estimated lifetime greenhouse abatement, taking into consideration discount factor.   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  | **Electricity saving (kWh)** | **GHG Coefficient** | **GHG saving (kg)** | **VEECs\*** | **Regional Factor** | | Electricity – Vic average | 2,647 | 1.095 | 2,898.5 | 2.90 |  | | Electricity – Melbourne | 2,647 | 1.073 | 2,840.2 | 2.84 | 0.98 | | Electricity - Regional Vic | 2,647 | 1.139 | 3,014.9 | 3.01 | 1.04 |   **Households without access to reticulated gas**  **Estimated annual and lifetime savings achieved**   |  | | --- | | 7,765 | | 9.0% | | 5 | | 100% |   **Input Data/Assumptions**  Annual Household Electricity Consumption (kWh /yr)  Percentage Reduction in Household Consumption due to IHD (%)  Average Lifetime of IHD (yrs)  Discount Factor (% of benefit attributable to VEET)  **Calculation**  Estimated electricity saving per annum (kWh /yr) for installing an IHD  = 7,765 x 9.0%  = 698.9  Estimated lifetime electricity savings (kWh)  = 698.9 x 5  = 3,494.5  Estimated lifetime electricity saving (kWh) taking into account the discount factor  = 3,494.5 x 100%  = 3,494.5  **Estimated number of VEET certificates**  **Calculation**  To calculate estimated lifetime greenhouse abatement, lifetime electricity savings are multiplied the standard VEET greenhouse coefficients.  Estimated lifetime greenhouse abatement, taking into consideration discount factor.   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  | **Electricity saving (kWh)** | **GHG Coefficient** | **GHG saving (kg)** | **VEECs\*** | **Regional Factor** | | Electricity – Vic average | 3,494.5 | 1.095 | 3,826.5 | 3.83 |  | | Electricity – Melbourne | 3,494.5 | 1.073 | 3,749.6 | 3.75 | 0.98 | | Electricity - Regional Vic | 3,494.5 | 1.139 | 3,980.2 | 3.98 | 1.04 | |
| **Demonstrate that the activity is likely to be additional to business as usual (BAU)** | Current Activity, no change. |
| **List the key variables that should be considered to ensure the activity best represents the delivered energy savings** | The current regulations for the IHD activity are well written and well thought out. The product requirements are thorough and ensure a high quality, accurate product is required. Watts Clever proposes the current regulations remain with the following two amendments only, as supported by information in this submission:   1. Increase the energy saving to 9% for IHDs that have a specific monitor display to show the energy use details in real time. 2. Either exclude web based and mobile portals or keep the VEEC level as is for these devices, all of the studies have shown these have a lower energy saving than the IHDs with a separate standalone display. |
| **List all existing product standards which support the claims for energy savings or related matters** | Current Activity |
| **Ensuring savings are valid** | Watts Clever believe that schedule 34, where a stand-alone real-time IHD is installed, should not be deemed a high risk activity for the following reasons:   1. Only one IHD can be installed per property, so there is no incentive or benefit for an installer to leave behind non installed product (spares), as was clearly the case with schedule 29 SPC’s and is still the case for schedule 21A, 21B, and 21C. 2. The IHD’s are new to the residents and unfamiliar, which is why residents want installers to install the product and will insist on this, whilst with a lighting product they would be happy to install themselves. 3. The IHD is simple to install and can be demonstrated to be working to the household immediately. 4. It is very straight forward to provide proof of point 3. The Essential Services Commission (ESC) could require the installer to take a photo of the installed product, which would include the installed product showing it is operating correctly and the meter serial number. This would make fraudulent claiming impossible and would ensure the IHD has been installed and is working at the premises. This cannot be done with any other schedule installation. It is unique and only possible with schedule 34, due to the meter serial number, which is unique to the home. Many APs have already adopted this method of ensuring the installers have installed the IHD correctly and that it is working. 5. The technology used in both Zigbee IHD’s and the Watts Clever IHD is sophisticated, expensive and cannot just be downgraded to a simple more cost effective version; the products would simply not pass the required laboratory tests. If someone tried to ship out inferior versions, they simply would not work due to the required components needed for the correct operation. This is not the case with other activities such as LED lights for example where it is very easy to substitute components and the product will still work, albeit at a lower standard and for a shorter time. 6. The AP and/or ESC would very quickly be able to establish if an IHD installation is not correct, unlike other activities where it can be very difficult to discern incorrect installations. The amount of VEECs that could be improperly created would be tiny at only up to 3 per house, in comparison to the potential risk of many other activities that could be in the tens per house or the hundreds for commercial. |
| **Protecting health and safety** | Current Activity |
| **Other benefits and issues** | The IHD is a sought-after product, however installations in the VEET scheme over the last 3 years have been restricted due to overly cautious energy saving levels which resulted in only 2 VEECs being awarded for the majority of Victorian houses. Due to the low VEEC level it has caused the product to be used as a marketing tool, as it is a highly appreciated product, rather than a standalone installation. Should the VEEC level be revised to reflect the energy saving capabilities, the IHDs could be installed as a standalone product and the benefits would become more available.  The Smart meter role out has now been complete, so most Victorians now have a smart meter. Many of those meters are eligible for the benefits of an installation of an IHD in order to save energy. Due to the over conservative approach to the abatement level, most of these households will not receive this benefit in understanding their usage and how they can save.  Other benefits customers have shared in addition to the savings of the IHD, that are impossible to quantify include:   1. The household becomes aware of the importance of purchasing appliances and fittings that are more energy efficient, so for example when their lights stop working they are more likely to buy replacement lights that are more energy efficient, as they have seen in real time the benefits. 2. The smart meter role out now makes sense, as energy monitoring was originally part of the smart meter role out plan. Installers and APs have often communicated that customers have said at installation “Now I understand why we had the smart meter installed”. 3. Increased awareness of energy saving, as the residents see it every day, has a flow on effect to other areas where the resident spends time such as in the workplace. 4. Expected continued savings past the 5 years due to changing people’s behaviours.   The current abatement levels for schedule 34 are a significant barrier to entry and will never allow the schedule to achieve its potential reach of energy savings. The market variation in the VEEC price coupled with the products high cost means that one day the product is just viable for AP’s to install and the next day it is not. On this basis planning for the AP and manufacturer is impossible to any reasonable level; the risk is just too high.  This is a situation that is unique to this schedule and does not affect other schedules in the same way due to the combination of product price and VEEC price. Watts Clever have presented clear and concise information, evidence, and arguments why this should be addressed and that the current levels are based on incorrect assumptions and information. |