



Connecting SMMs with expert energy efficiency support

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Executive summary

Australia's small and medium sized businesses (SMEs) report up-front costs, time limitations and management commitment as the biggest barriers to smarter energy use and controlling energy costs. Yet even if these barriers are overcome, they face another significant hurdle: they just don't know who to trust to provide energy efficiency products and services.

Connecting SMEs to trusted and skilled energy efficiency service providers is critical for developing energy solutions for business that incorporate cost effective energy efficiency. However the difficulty SMEs face in establishing that connection remains a significant barrier.

As Australia's peak body for energy efficiency, cogeneration and demand management, the Energy Efficiency Council (EEC) undertook to work with its members, the broader energy efficiency industry, energy users and energy efficiency program managers to establish the critical success factors for connecting energy users to skilled service providers.

In this phase of investigation, the project was limited to a single sector, acknowledging that learnings established within this priority sector will likely have applications across SMEs in other sectors. As the manufacturing sector is Australia's largest user of industrial energy and dominated by small SMEs, the project focused on building the relationship between small to medium size manufacturers (SMM) and energy efficiency service providers.

Buyers and sellers in any transaction have needs for a successful transaction outcome or that help create a better transaction experience for the participants. Some of the needs must be met by the core participants in the service transaction, the buyer and the service provider. Others reflect the expected role of government, industry, business and other organisations involved in the design and delivery of energy efficiency programs for SMEs. Reflecting these needs in program design allows for the design and delivery of energy efficiency programs that can overcome the trust hurdle and prevent the breakdown of energy efficiency implementation at the point of procurement.

There are numerous points of alignment in the needs of energy efficiency buyers and sellers. They support the need for action in three different areas.

Recommendations

Upskill energy efficiency professionals

Programs that train energy efficiency specialists and supporting trades are essential to improve energy efficiency in all areas.

1. Establish manufacturing sector energy efficiency and energy productivity skills, knowledge and experience requirements for energy efficiency specialists and key trades.
2. Based on the findings of Recommendation 1, develop critical training and certification initiatives with broad benefits and applicability.

Improve transparency

Implement approaches that allow for transparent assessment of product and service options, and provide independent assurance of quality.

3. Expand access to existing supplier panels and invest in the development of new panels where confidence gaps are identified.
4. Establish skill, knowledge and experience requirements and identify priority areas for certification.
5. Based on the findings of Recommendation 4, invest in the development of certification schemes for the most important suppliers or installers.
6. Keep energy efficiency standards for appliances, vehicles and buildings up to date and harmonise them with leading economies.
7. Support the development of product certification schemes, perhaps based on the work of the TOP TENS.

End-to-end support

The most successful government energy efficiency programs include an implementation element. Approaches need to respond to the energy intensity, uniformity and personality of different businesses.

8. Develop a best practice program model for end-to-end implementation support.
9. Invest in research to identify priority industries and design models for bulk-purchasing approaches.
10. Facilitate the pilot of a bulk-purchasing equipment or services approach.

1 Approach

The National Energy Productivity Plan (NEPP) commits the Commonwealth to helping businesses self-manage energy costs (Measure 6).

Connecting SMEs to trusted and skilled energy efficiency service providers is critical for developing energy solutions for business that incorporate cost effective energy efficiency. However the difficulty SMEs face in establishing that connection remains a significant barrier.

Understanding the best approaches for connecting SME energy users with high quality energy efficiency service providers is an essential insight for program design and implementation of the NEPP.

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In this phase of investigation, the project was limited to a single sector, acknowledging that learnings established within this priority sector will likely have applications across SMEs in other sectors. As the manufacturing sector is Australia's largest user of electricity and dominated by small SMEs, the project focused on building the relationship between small to medium size manufacturers (SMM) and energy efficiency service providers.

As a first step, a range of recent local and international programs encouraging the implementation of energy efficiency measures were identified for review. It would have been ideal to select only those with an explicit focus on bringing buyers and sellers of energy efficiency products and services together. However, the programs tended to have much broader goals, so it was necessary to identify relevant insights within the larger experience of programs.

The experience and expectations of energy users was sought through consultation with industry and business associations with a strong track record of engaging with members on energy efficiency issues. A number of the energy user associations also had experience as energy efficiency program managers and were also able to share their insights from that perspective.

The EEC was able to leverage its member base to consult with energy efficiency service providers and industry experts. A mix of organisations was selected to ensure exposure to a range of different government programs, different jurisdictions and a variety of product and service offerings.

A full list of programs and interviews is included at Appendix A.

Key insights were collated from the research and stakeholder discussion and informed the development of the recommendations for action.

2 Profiling Australia's small to medium sized manufacturers

Australia's manufacturing sector is important to the Australian economy, contributing around \$100 billion (6.2 per cent) to Gross Domestic Product annually and supporting nearly 900,000 jobs, or 7.4 per cent of total employment (Department of Industry, Innovation and Science, 2015).

Of the approximately 84,000 manufacturing businesses in Australia, fabricated metal products (17 per cent), machinery and equipment (13 per cent), food (13 per cent) and furniture (9 per cent) have the largest number of participants (Figure 1).

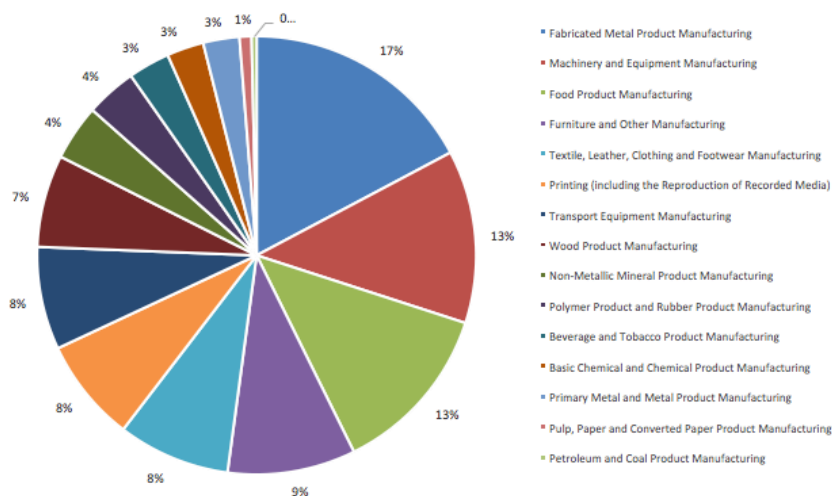


Figure 1: Breakdown of manufacturing sector by ANZSIC sub-division (ABS, 2016a).

The sector is dominated by small and medium sized enterprises (SMEs), with 99 per cent of manufacturing businesses employing 199 staff or less (ABS, 2016a).

The manufacturing sector as a whole is Australia's largest user of energy (total of electricity, natural gas, LPG, diesel, petrol) at 27 per cent of total use by industry (Figure 2).

Defining SMEs

SMEs are generally defined by number of employees, annual turnover, or a combination of the two. The Australian Bureau of Statistics (ABS) defines a SME as an actively trading business with less than 200 employees - with small businesses employing less than 20 staff, and medium-sized businesses employing 20–199 staff (Commonwealth of Australia, 2012).

Definitions based on annual turnover vary for different purposes, with small businesses with a turnover up to \$10 million annually potentially eligible for small business tax concessions although caps of \$2 million and \$5 million apply for other initiatives (ATO, 2016). Businesses with annual turnover between \$5 million and \$250 million are included in recent mid-size businesses analysis (Grant Thornton, 2015).

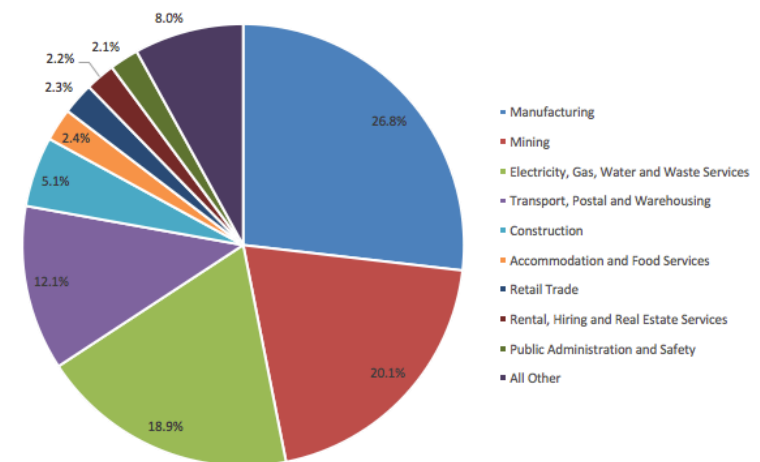


Figure 2: Consumption of energy (total of electricity, natural gas, LPG, diesel, petrol) (GJ) (calculated from ABS, 2016).

Electricity demand at 36 per cent of total is more than twice the next highest user, the mining sector (Figure 3). Consumption of natural gas and LPG is also significant at 40.7 per cent and 22.8 per cent respectively (ABS, 2016).

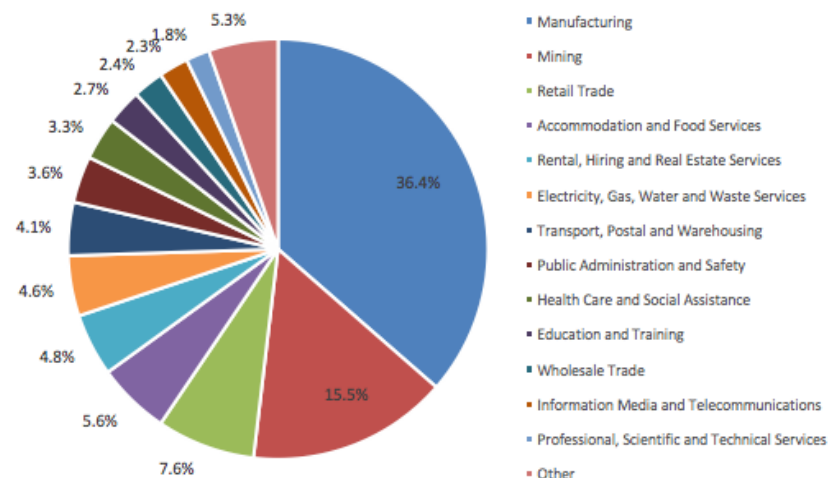


Figure 3: Consumption of electricity (GWh) (ABS, 2016)

There is a significant difference in the electricity use of SMEs from that of larger businesses in the sector. Despite dominating by number of businesses, manufacturing SMEs use only 14 per cent of the sectors total electricity demand. Yet they pay more, making up 28 per cent of electricity spend by manufacturers. (ABS, 2016b).

Similar proportions are seen in the use of natural gas, with manufacturing SMEs only accounting for 13.9 per cent of the sector's use. The distribution of LPG use is much more even, with manufacturing SMEs using 46.4 per cent.

The energy use of manufacturing SMEs is significant across general industry. Manufacturing SMEs are just 4 per cent of all SMEs yet account for 5.1 per cent of total electricity consumption, 5.7 per cent of natural gas consumption and 10.6 per cent of LPG consumption (ABS, 2016b).

Electricity use is not uniform across the sector, with primary metal and metal product manufacturing businesses making up 59 per cent of total sector electricity demand and averaging at 13 GWh per entity per annum (Figure 4). Pulp, paper and converted paper product manufacturing (3.92 GWh) and petroleum and coal product manufacturing (3.61 GWh) have the next highest average electricity intensity.

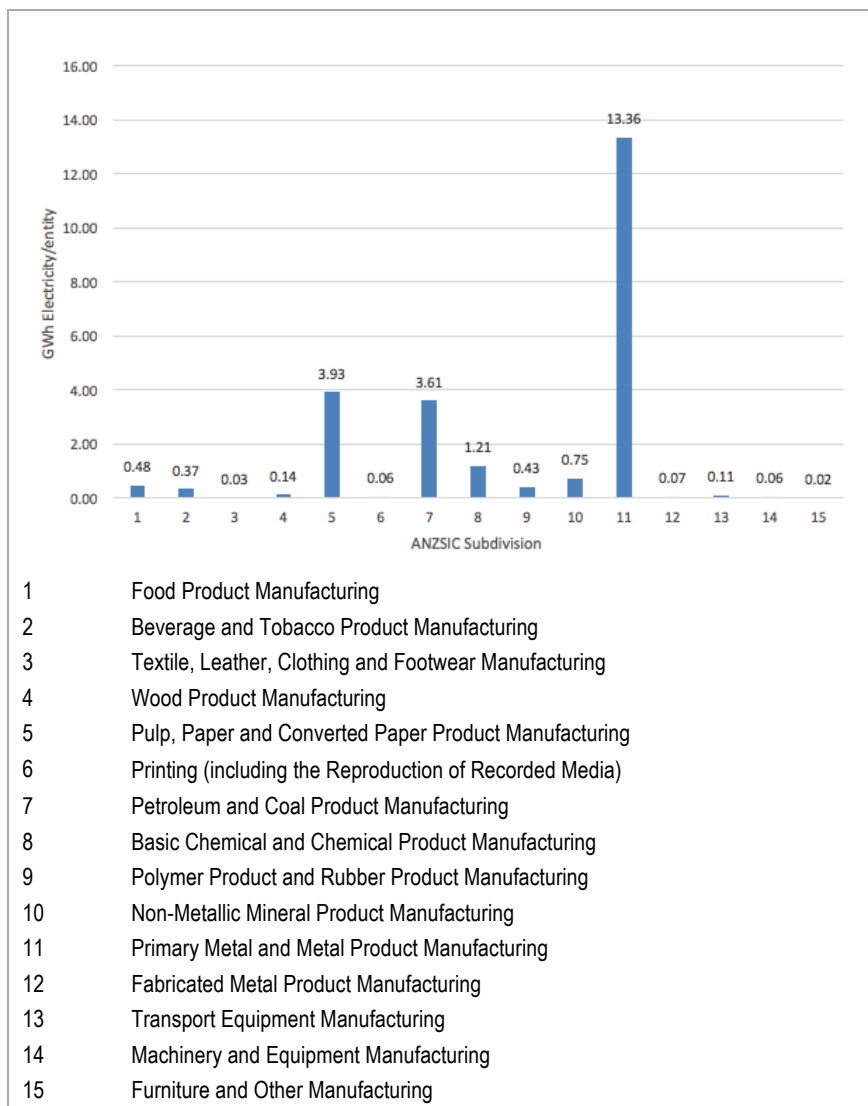


Figure 4: Electricity intensity of manufacturing sub-divisions (calculated from ABS 2016a and ABS 2016b)

There have been many reports that highlight the benefits of energy efficiency for SMEs and examine their energy efficiency behaviours. While not exclusively addressing SMMs, these benefits and behaviours can be expected within SMMs as a subset of the larger SME sector.

The International Energy Agency (IEA) reports that improving SMEs' energy efficiency is a key way to increase their profitability and competitiveness. As well as reducing SMEs' energy costs, greater energy efficiency can improve SMEs' product quality and output, reduce risks and liabilities, enhance resilience and enable new business opportunities. Even where fuel prices are low, energy price volatility and uncertainties hamper SME growth; energy efficiency can reduce exposure (IEA, 2015).

Improving the energy productivity of SMEs has strong impacts on wider economic productivity, savings and jobs through co-benefits such as improved equipment and increased output (Commonwealth of Australia, 2015).

Across SMEs of all types, it is generally accepted that cost-effective energy efficiency measures could shave as much as 30 per cent off energy consumption, including gas (IEA, 2015). Evidence shows that the potential for energy efficiency in SMEs is typically more cost-effective than in other sectors as relatively few of them have implemented energy efficiency improvements (Swain, 2016).

Australian Bureau of Statistics research shows SMEs are not particularly motivated by recognised drivers of sustainability; cost saving is the greatest motivator (ABS, 2016). There is also evidence that amongst SMEs energy efficiency has been seen as a carbon reduction issue, rather than a business issue which has led to marginalisation of energy efficiency opportunities and business benefits (Dee & Creagh, 2015). As such, SMEs are less likely than larger companies to undertake environmental management activities (Figure 5).

Despite the efforts of numerous government and industry led programs focused on changing these embedded behaviours, SME activity in these areas remains low. This is generally attributed to SMEs being poor in time and financial resources, and occupied by their core business (Australian Government, 2012).

Yet such generalised assumptions fail to recognise that SMEs are not all the same, and variations can be great even within the same industry.

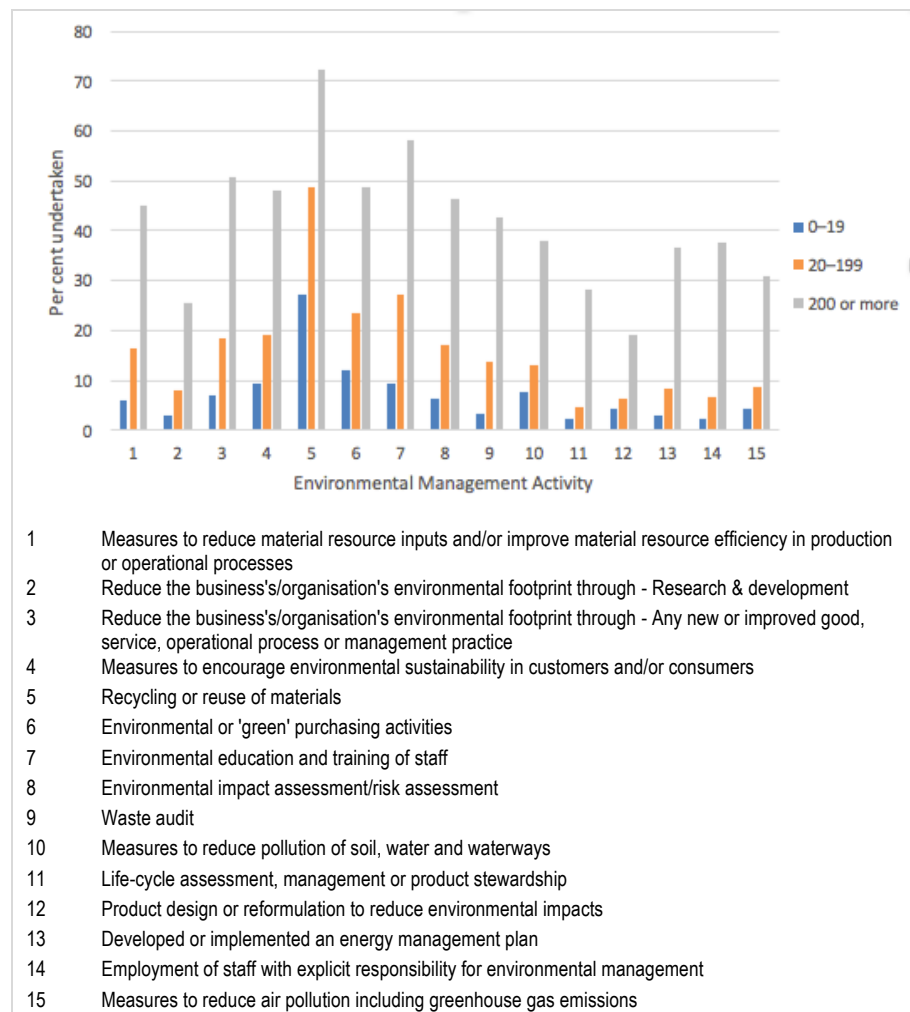


Figure 5: Adoption of environmental management initiatives by business size (ABS, 2016)

In some industries energy use is a significant business expense and a limitation to growth and profitability. Yet for others energy costs are relatively insignificant or immaterial in relation to other production input costs. This variation is present even within the generally energy intensive manufacturing sector, as shown in Figure 4.

Beyond differences in energy intensity, there are industries in which manufacturing processes tend to be similar and energy use is dominated by one or two relatively homogeneous pieces of equipment or processes. In others, differentiation is a competitive advantage and a closely guarded secret.

Within industries too there is diversity. Individual entities very much reflect the personality of key staff, and while there are some with a strong optimisation and growth focus, there are others that seek to 'satisfice', content to maintain the status quo and tending towards the more hassle free, low risk behaviours (Figure 5).

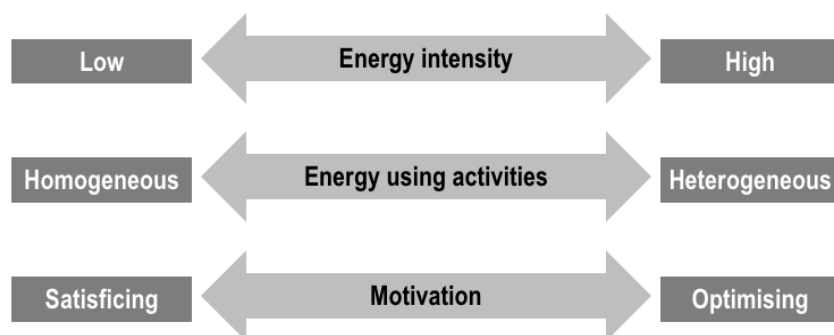


Figure 6: Different factors for categorisation of SME and community organisations

Policy and program experts should be alert to the combinations of these different characteristics that manifest in particular industries, sub-divisions of industry and organisations, as they have significant implications for the designing and targeting of successful interventions.

3 The trust barrier

There is much research that examines the theoretical barriers preventing SMEs from realising their substantial potential for efficiency improvements. While categorisations vary, the barriers are generally consistent with the summary from Trianni, A. *et al.* (2015) presented in Table 1.

Australian organisations report up-front costs, time limitations and management commitment as the biggest barriers to making changes that enable smarter energy use that effectively manages energy costs (Instinct and Reason, 2015, pp 51).

However it is critical to note that even if these barriers are overcome, SMEs just don't know who to trust to provide energy efficiency products or services.

Thirty-seven per cent of EEIG participants reported 'We don't know who to trust to get advice on improving energy efficiency'. This was down from 51 per cent in the pre-activity survey, but remains a very high figure. Indeed the actual figure may be higher, as respondents that think they have access to advice may actually not be receiving high-quality advice (Instinct & Reason, 2015).

Concern over not knowing 'who to trust' was reinforced in discussions with EEIG recipients. As they rolled out their projects, EEIG recipients reported that one of the most frequent and persistent queries was which products or suppliers to choose, advice which they were unable to give.

The Central Victorian Greenhouse Alliance noted that the marketplace is saturated with advertising from energy retailers, solar panel installers and suppliers, leading to a desensitisation of the audience and considerable mistrust. This was also noted by Master Grocers, who said some businesses having been inundated with salespeople and described the deluge of information on energy initiatives provided to SMEs as a "lot of noise".

It is therefore crucial to adopt approaches that overcome these trust issues, and give confidence to potential consumers of energy efficiency products and services.

Table 1: Theoretical barriers to SME energy efficiency (Trianni, A. *et al.*; 2015)

| Categories | Barriers |
|---------------------|---|
| Technology-related | Technologies not adequate Technologies not available |
| Information-related | Lack of information on costs and benefits Unclear information from technology providers Trustworthiness of the information source Information issues on energy contracts |
| Economic | Low capital availability Investment costs External risks Intervention not sufficiently profitable Intervention-related risks Hidden costs |
| Behavioural | Other priorities Lack of sharing the objectives Lack of interest in energy-efficiency interventions Imperfect evaluation criteria Inertia |
| Organisational | Lack of time Divergent interests Lack of internal control Complex decision chain Low status of energy efficiency |
| Competence-related | Implementing the interventions Identifying the inefficiencies Identifying the opportunities Difficulty in gathering external skills |
| Awareness | Lack of awareness |

4 The needs of buyers and sellers

Buyers and sellers in any transaction have needs for a successful transaction outcome or that help create a better transaction experience for the participants.

The following needs of buyers and sellers have been collated from desktop research of local and international energy efficiency programs and consultation with energy users, energy efficiency service providers and energy efficiency program managers in government, industry and business organisations.

Some of the needs must be met by the core participants in the energy efficiency service transaction, the buyer and the service provider. Others reflect the expected role of government, industry, business and other organisations involved in the design and delivery of energy efficiency programs for SMEs.

By responding to these needs, buyers and sellers can better understand the expectations of the other primary party to the transaction and facilitate more productive interactions.

Consideration of the needs gives rise to a range of design insights for organisations involved in the design and delivery of energy efficiency programs for SMEs to better support buyers and sellers to meet transaction needs.

Reflecting these needs in program design allows for the design and delivery of energy efficiency programs that can overcome the trust hurdle and prevent the breakdown of energy efficiency implementation at the point of procurement.

4.1 The needs of the buyer

| Need | Commentary | Design insight |
|--------------------------------------|--|--|
| Know my industry and the business | Buyers expect service providers to have a deep understanding of their industry and take the time to understand specific business priorities. Both elements are necessary for the service provider to be credible, in particular when proposing significant changes to production processes. Service providers need to recognise that each business is different and integrate business needs into their technical recommendations. | <ul style="list-style-type: none">• Key skill, knowledge and experience requirements of service providers must be established.• Mechanisms are required for assessing possession of skill, knowledge and experience requirements.• Many energy efficiency service providers would benefit from industry specific training. |
| Address the higher order issue first | Commonly, there are other important issues or concerns occupying decision makers' attention. This means that energy efficiency opportunities are very unlikely to register before the main perceived issue is addressed. Acknowledging and addressing these concerns first can allow 'head space' for other issues to be raised. It also demonstrates a flexibility and willingness to listen, which is very important in developing 'trusted advisor' status. Establishing this status creates a more receptive audience for the introduction of new ideas and concepts. | <ul style="list-style-type: none">• Energy efficiency services may benefit from being packaged up with other business support services. |
| Prove your independence | The recommendations of some product and service providers are treated with great scepticism or dismissed outright if there is perceived to be a conflict of interest. Recommendations are best received from a verified independent intermediary. Many energy efficiency consulting services are able to provide independent development of a detailed business case for specific energy efficiency opportunities identified in the audit phase, including assessment of equipment options, financial analysis and management of the procurement process. Ensuring this element is part of future programs would provide strong implementation support. | <ul style="list-style-type: none">• There is a potential discrete role for energy efficiency consultants, operating independently of any particular product, to offer business case analysis and procurement support. |

| Need | Commentary | Design insight |
|-----------------------------------|--|---|
| Give me a single point of contact | <p>Identifying products, suppliers and managing procurement essential for an end-to-end energy efficiency program is very challenging for time poor business managers with relatively low technical skills. This can lead to the upgrade process being abandoned.</p> <p>The Sustainability Victoria Energy Efficient Office Buildings Program demonstrated that providing a single point of contact throughout the upgrade process simplified the process for the buyer and was very well received. Additionally, recent research for the City of Melbourne indicated that establishing a 'relationship manager' to handle all Council related enquiries, including the introduction of energy efficiency considerations, would help build engagement and trust with building owners. (Schwenk, 2016)</p> <p>Providing SMMs with a single point of contact throughout the entire process minimises the time commitment and simplifies the procurement process.</p> | <ul style="list-style-type: none"> Programs should be structured to provide end-to-end support with a single point of contact throughout. |
| Show your credentials | <p>Many businesses report being inundated with advertising and sales people and it being 'virtually impossible' to substantiate the claims made of the different product and service providers. Having an independent mechanism for substantiating product claims would significantly boost consumer confidence.</p> <p>Many service providers already participate in government supplier panels from which providers are selected to provide services to government and others. The panel process generally involves a detailed application and assessment process to give confidence of an individual's or organisation's ability to deliver the services covered under the service panel agreement. Examples include the NSW Sustainability Advantage Program Module Delivery Panel. The ability to access such a panel of suppliers reduces the procurement uncertainty for buyers.</p> <p>Industry or business associations could also develop panels of approved product and service providers, particularly if they are also offering energy efficiency advice and assessment support.</p> <p>There is also an opportunity for the expansion of existing accreditation programs and the development of new programs based on need for energy efficiency specialists and key trades involved in the upgrade process.</p> | <ul style="list-style-type: none"> Need for independent accreditation of products. Need for independent accreditation or validation of suppliers through approved panels and/or certification. Potential role for industry associations and/or government to provide access to panels of approved products and suppliers. |
| Be honest and be accurate | <p>Businesses want honest recommendations from their trusted advisors. However, there can be a natural inclination to present overly optimistic forecasts or underestimate the costs to the business.</p> | <ul style="list-style-type: none"> Ensure standards require a sufficiently robust analysis and presentation of energy efficiency opportunities (as occurs in the new energy audit standard AS/NZS 3598:2014). Inform businesses on available standards. Train the energy efficiency industry on the application of relevant standards. |
| Focus on value / productivity | <p>To be of value, audit recommendations should be succinct, targeted to the actual business' context (size, priorities, etc.) and provide real productivity gains. Presentation of generic opportunities has left some customers disappointed.</p> <p>Presenting the co-benefits of energy efficiency further boosts the value as there are occasions where these are more important than the energy savings in the customer's eyes.</p> | <ul style="list-style-type: none"> Connect productivity and other co-benefits of energy efficiency in approaches. |

| Need | Commentary | Design insight |
|--|---|--|
| Be there for the long run | <p>Even good ideas can take a long time to be taken up. In line with the idea that trust can be built, suppliers or advocates of energy efficiency need to demonstrate that they are prepared to accompany a customer in the long run and wait for them to be ready to make the right decision without pressuring the decision makers.</p> <p>The EEIG program had almost three years, and there were cases where this was insufficient for development and delivery of the project and provision of essential support through energy efficiency project implementation by the SME.</p> <p>Suppliers should also be ready for the customers to invest progressively, even if it does not mean that efficiencies are realised as promptly as they could be.</p> <p>Where experience gained through operating indicates a need for change, participants and service providers should be consulted on proposed amendments and notified of changes well in advance to allow them to best manage the impact.</p> | <ul style="list-style-type: none"> Establish programs for a three to five year minimum timeframe and seek to ensure consistency of offering throughout. Engage early and widely on any proposed changes to programs. |
| Support at the right point in the decision making and implementation process | <p>The actual point of implementation is one of the most challenging for the business decision maker. There is relatively little risk in accepting energy assessments, but making a decision to implement the assessment recommendations, especially when costly and other risks to business operations need to be considered. This is the most critical time to ensure access to trusted advice.</p> | <ul style="list-style-type: none"> Programs should be structured to provide end-to-end support particularly with implementation. |

4.2 The needs of the service provider

| Need | Commentary | Design insight |
|---|--|--|
| Consistent levels of support throughout | <p>Programs need to be consistent over their lifetime. A stop-start program or one where levels of financial or other support vary, undermines the confidence of the energy user and can result in costly loss of investment by service providers. Numerous experiences were shared where an unscheduled change in a program resulted in the collapse of a client relationship.</p> <p>Where experience gained through operating indicates a need for change, participants and service providers should be consulted on proposed amendments and notified of changes well in advance to allow them to best manage the impact.</p> | <ul style="list-style-type: none"> Establish programs for a three to five year minimum timeframe and seek to ensure consistency of offering throughout. Engage early and widely on any proposed changes to programs. |
| Avoid being overly prescriptive | <p>There are programs that are very prescriptive on the process, such as on the number and timing of meetings to be held with the client. This can be very costly, especially in non-metropolitan areas and also off-putting to the client who may not be able to make the prescribed amount of time available.</p> | <ul style="list-style-type: none"> Design programs with the input of service providers and relevant industry bodies to avoid establishing unnecessary requirements and allow sufficient flexibility to adapt to individual needs. |
| Minimise the administration | <p>There are significant costs that accompany the benefits of participating in government programs. Reducing the administration burden would lessen one of the major costs.</p> <p>For example, harmonising energy efficiency obligations in different states to reduce accreditation, product registration and compliance costs, and extending panels of approved suppliers for multiple purposes so that only one application is required.</p> | <ul style="list-style-type: none"> Seek opportunities to minimise administration requirements in existing and any new programs. |

| Need | Commentary | Design insight |
|--|--|--|
| Use grants fairly and judiciously | <p>Grants for implementation are often deal sweeteners rather than deal makers, so while there are often good uptake rates, it is difficult to ascertain the additionality of these interventions in increasing implementation. The addition of grant funding to a business case for one organisation also limits transferability of the energy efficiency improvement to other organisations who may not have access to that same level of grant funding.</p> <p>Generally funds allocated for grant programs, especially competitive, limited grant funding, would be better invested in targeted, evidence based program investment or to support the initial commercialisation of new approaches.</p> <p>Yet where grant funding is provided, it is important that it be equitable. The example given was the Clean Technology Investment Program (CTIP), which was very generous for those eligible to access the funding. However there were other industries, outside of manufacturing such as fruit growing, that were ineligible, despite having significant energy costs and significant opportunity for improvements in energy efficiency as these were not within the policy intent of the CTIP.</p> | <ul style="list-style-type: none"> • Provide only limited grants where true additionality can be established or to support the initial commercialisation of new approaches. • Focus government investment on targeted, evidence based programs, instead of through grant programs to stimulate implementation. |
| Be of sufficient size | <p>The size of the organisation and potential energy efficiency service is important. This can be a challenge for smaller energy users as the individual projects are not of sufficient size to warrant the investment in business development and implementation. Aggregating smaller projects would make them much more attractive to service providers.</p> <p>For industries where individual energy efficiency opportunities may be small, but if aggregated would be much larger, there may be an opportunity to roll-out suitable upgrades to common energy-intensive equipment within certain industries. Such an initiative could be led by industry associations, banks or other influential entities potentially financed through a Clean Energy Finance Corporation (CEFC) type partnership.</p> | <ul style="list-style-type: none"> • Investigate the opportunity for a bulk-purchasing equipment or services approach. |
| The right decision maker in the SMM must be involved | <p>The right decision maker in the SMM must be involved in the process so there could be some guarantee of access to or authority for expenditure.</p> | <ul style="list-style-type: none"> • Ensure mechanisms are in place that identify the appropriate decision maker in the SMM and facilitate their participation. |

5 Creating the connections

There are numerous points of alignment in the successful transaction needs of energy efficiency buyers and sellers. They support the need for action in three different areas:

1. Boost the capability of service providers
2. Improve the transparency of the energy efficiency product and service markets
3. Provide end-to-end support to energy users in both decision-making and implementation

5.1 Upskill energy efficiency professionals

Some energy efficiency service providers require deep skills in energy efficiency (e.g. energy auditors), others such as certain trades only require discrete skills, such as how to install a specific technology.

Programs that train energy efficiency specialists are essential to improve energy efficiency in all areas (including residential, industrial and commercial buildings). The industry is already taking action, with industry associations including the EEC, delivering training on subjects including measurement and verification.

We know that investment in certain training and certification initiatives – such as the new energy audit standard – is warranted due to the very broad benefits of establishing a cohort of trusted energy auditors.

Yet the key skill, knowledge and experience requirements for energy efficiency specialists and key trades to service the many different subdivisions of industry across the economy are not yet well understood. Establishing these requirements is an essential first step toward the development of more focused training and certification schemes. Given its dominance of Australia's energy use, the manufacturing sector should be the first focus sector, followed by others priority sectors.

Supporting businesses to improve energy productivity requires a skill set additional to that of traditional energy efficiency. Research is needed to identify global best practice in energy productivity services and identify the range of essential skills, knowledge and experience to provide these services to Australian businesses.

Recommendations

1. Establish manufacturing sector energy efficiency and energy productivity skills, knowledge and experience requirements for energy efficiency specialists and key trades.
2. Based on the findings of Recommendation 1, develop critical training and certification initiatives with broad benefits and applicability.

5.2 Improve transparency

Approaches should be considered that allow for transparent assessment of product and service options, and provide independent assurance of quality.

Supplier panels

There has been effort to develop central registries of service providers such as the Melbourne Carbon Services Directory or the WA Clean Technologies and Renewable Energy Services Directory. However, directories with no vetting process do not provide much value to users as they still did not know:

- who is best placed to respond to their specific needs
- which suppliers are trustworthy.

Supplier panels are likely to be a more effective approach. Government organisations frequently establish panels of suppliers from which providers are selected to provide services to government and others. The panel process generally involves a detailed pre-assessment of an individual or organisation's technical, financial and other relevant credentials to give confidence of their ability to deliver the services covered under the service panel agreement. Examples include the NSW Sustainability Advantage Program Module Delivery Panel and the Sustainability Victoria Energy Efficient Office Buildings panel of service providers.

These supplier panels could be expanded to a broader suite of services, harmonised between programs and jurisdictions, or new panels established for particular services within specific target industries as required. While there is a significant resource commitment in the initial assessment process and on-going review to ensure standards are being maintained, this approach has been found to give significant buying confidence to the consumer looking to take the next step towards implementation.

There may also be a role for industry bodies such as the EEC to develop and maintain panels of approved products and suppliers in partnership with government.

Recommendation

3. Expand access to existing supplier panels and invest in the development of new panels where confidence gaps are identified.

Supplier certification

Supplier certification programs play a similar role to supplier panels, giving users confidence that the individual or organisation they are engaging has the knowledge and skills to deliver the particular process as claimed. Accreditation protects users against aggressive or overly optimistic benefit claims or against inferior quality work standards.

The UK Carbon Trust maintains the “Green Business Directory” of certified suppliers or installers of energy efficient equipment or renewable energy technology, as part of their “end-to-end” service delivery approach.

South California Edison (SCE)’s HVAC Optimisation program is based on the SCE’s training and certification program for best practice HVAC maintenance and equipment rating. SCE helps energy users to sign long-term agreements with certified (SCE vetted and trained) maintenance providers. Contractors participating in the HVAC Optimisation program must be approved by the HVAC Optimisation team and undergo training to offer the specific repairs and maintenance prescribed by the program. A contractor recognition program with Gold, Silver, Bronze levels advertises the quality of the maintenance work based on a points system.

The EEC administers the Energy Efficiency Certification Scheme which certifies professionals that have the skills and experience to lead and manage all types and scale of building energy upgrades, up to and including an Integrated Building Energy Retrofit (IBER) and to work effectively with their clients (<http://www.efficiencycertification.org.au>).

Developing new certification schemes is a costly and time consuming process, but can be worthwhile in certain circumstances, i.e. where the addressable market is very large. In these cases, ensuring standardisation of approach and consistency of delivery will boost consumer confidence.

Recommendations

4. Establish skill, knowledge and experience requirements and identify priority areas for certification.
5. Based on the findings of Recommendation 4, invest in the development of certification schemes for the most important suppliers or installers.

Product standards and certification

The Greenhouse and Energy Minimum Standards (GEMS) program is jointly run by the Australian, New Zealand, state and territory governments. The GEMS program protects consumers from the ongoing hidden costs of products through:

- Minimum standards for the energy efficiency of goods such as fridges, televisions, air conditioners and electric motors; and
- Energy labels to help consumers identify the efficiency of appliances.

GEMS is one of the biggest drivers of energy efficiency in Australia, annually delivering around \$1 billion in avoided energy costs and cutting emissions by over 1.5 per cent. GEMS saves the average consumer around \$300 per year, and the estimated benefit-cost ratio is between 1.7 and 5.2 for the period 2014-2020 (Databuild, 2015).

Australia’s major trading partners have standards for a wide range of products that are regularly updated. In order to lower costs for industry and ensure that standards remain effective, government action should be taken to keep standards up to date and harmonise them with leading economies and expand the number of products that are covered by standards and labels, including commercial and industrial equipment.

As with supplier certification, product certification gives buyers the confidence that the performance and energy saving claims of a product have been independently validated. This significantly simplifies the product assessment for the buyer and gives manufacturers a very clear performance benchmark against similar products.

Also costly and time consuming to develop, further research is needed to identify the product categories of greatest need and opportunity. The work undertaken by the International Partnership for Energy Efficiency Cooperation Top Ten Energy Efficiency Best Practices and Best Available Technologies Task Group (TOP TENS) to identify best available technologies provides one approach to identify the highest priority product categories, based on their potential energy savings resulting from widespread uptake.

Recommendations

6. Keep energy efficiency standards for appliances, vehicles and buildings up to date and harmonise them with leading economies.
7. Support the development of product certification schemes, perhaps based on the work of the TOP TENS.

5.3 End-to-end support

The most successful government energy efficiency programs include an implementation element. Implementation support can take a number of different forms including energy efficiency consultancy support to independent evaluation of recommendations, advisors or case managers to provide on-going guidance and grants to lower the up-front costs of implementation.

Access to expert support

Future programs should focus on delivering highly targeted entity specific interventions designed and delivered to elicit large, cost effective energy savings. It is critical that programs extend beyond the provision of information and assessments and connect energy users with experts through decision making and implementation. While this may result in smaller, more targeted programs, program effectiveness is likely to greatly increase.

Key insights for design include:

- Understand target audience priorities and consider combining energy efficiency with other business offerings.
- Structure programs to provide end-to-end support particularly with implementation support.
- Establish programs for a three to five year minimum timeframe.
- Design programs with input of service providers and relevant industry bodies to avoid establishing unnecessary requirements and allow sufficient flexibility to adapt to individual needs.
- Seek opportunities to minimise administration requirements in existing and any new programs.
- Seek to ensure consistency of offering throughout and engage early and extensively on any proposed changes.

- Establish a single point of contact for each SME that participates in the program.
- Examine the role for energy efficiency consultants to provide business case analysis and procurement support.
- Connect productivity and other co-benefits of energy efficiency in approaches.
- Ensure mechanisms are in place that identify the appropriate decision maker in the SMM and facilitate their participation.
- Provide only limited grants where true additionality can be established or to support the initial commercialisation of new approaches.
- Focus government investment on targeted, evidence based programs, instead of through grant programs to stimulate implementation.

Recommendation

8. Develop a best practice program model for end-to-end implementation support.

Bulk equipment change out program

There are segments within SMMs for whom energy costs are a concern and a limitation to growth but they lack the time and internal capacity to upskill and make the energy saving changes. They will not respond to information only programs. It is unrealistic to expect this cohort to develop the level of understanding necessary to drive change.

These groups are ideal for the centrally coordinated roll-out of suitable upgrades to common energy-intensive equipment within these industries. This gives access to expert support, but removes the need for internal upskilling and capacity building.

There may be a role for industry associations, banks or other influential entities to take on the coordination of such roll-outs, potentially financed through a Clean Energy Finance Corporation (CEFC) type partnership.

Recommendations

9. Invest in research to identify priority industries and design models for bulk-purchasing approaches.
10. Facilitate the pilot of a bulk-purchasing equipment or services approach.

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Appendices

Appendix A: Interviewees and related programs

| Name of organisation / program | Interview | Desktop review |
|--|-----------|----------------|
| Energy user groups or SMM representatives* | | |
| Moreland Energy Foundation (MEFL); including the Positive Charge program and environmental representatives | ✓ | |
| Australian Industry Group | ✓ | |
| NSW Business Chamber | ✓ | |
| EE Program Facilitators | | |
| NSW Office of Environment and Heritage (OEH), <i>Energy Efficiency for Small Businesses program (EESB)</i> | ✓ | ✓ |
| NSW Office of Environment and Heritage (OEH), <i>Sustainability Advantage</i> | ✓ | ✓ |
| NSW Office of Environment and Heritage (OEH), <i>Energy Saver Scheme (ESS)</i> | ✓ | ✓ |
| Queensland Chamber of Commerce and Industry (CCIQ) <i>EcoBiz</i> | ✓ | |
| Sustainability Victoria (SV) <i>Smarter Resources, Smarter Businesses (SRSB)</i> <i>Building Business Capability (BBC)</i> <i>Energy Efficient Office Buildings</i> | ✓ | ✓ |
| The Carbon Trust, UK Various programs, including: UK Green Business Fund | ✓ | ✓ |
| Indian Bureau of Energy Efficiency (IBEE) (and partners), <i>Energy Efficiency Programme for Small and Medium Enterprises</i> | | ✓ |
| New York State Energy Research and Development Association (NYSERDA) <i>Flexible Technical Assistance Program (FlexTech)</i> | | ✓ |
| Southern California EDISON (SCE) Various programs, including: Continuous Energy Improvement; HVAC Optimisation; and Direct Install. | | ✓ |
| Pacific Gas and Electric Company (PG&E) Various programs, including: rebates, financing and advice) | | ✓ |

| Energy efficiency service providers | |
|-------------------------------------|---|
| Minus 40 | ✓ |
| Outperformers | ✓ |
| Balance Energy | ✓ |
| Genesis Now | ✓ |
| Northmore Gordon | ✓ |

Appendix B: Characterisation of program reviewed

| Program | Components of EE Intervention Addressed | | | | | | | | Summary of Program Logic (targeted issues and barriers) |
|---|---|----------------------|------------------|-----------------|----------------------|-------------------|-----------------|-----------------|--|
| | Full project facilitation (all stages) | EE Assessment | | | Implementation | | | | |
| | | Financial assistance | Vetted assessors | Expert networks | Financial assistance | Vetted installers | Vetted products | Expert networks | |
| Domestic | | | | | | | | | |
| OEH- Energy Efficiency for Small Businesses Program | ✓ | ✓ | ✓ | | ✓ | | | ✓ | <ul style="list-style-type: none">Support for assessors and links to rebate program. Limited coordination support for implementation.Promotion of scheme through industry networks and service providers' clients. |
| OEH- Energy Saver Program | | ✓ | ✓ | | | | | ✓ | <ul style="list-style-type: none">Incentive scheme based on use of vetted assessors that can support implementation through their own networks.Promotion of scheme through industry networks and service providers' clients. |
| OEH- Sustainability Advantage | | | ✓ | ✓ | | | | ✓ | <ul style="list-style-type: none">Training on EE opportunities.Informal links to vetted service providers (module teachers) may improve implementation. |
| CCIQ- EcoBiz | | | | ✓ | | | | ✓ | <ul style="list-style-type: none">Training on EE opportunities.Informal links to vetted service providers (module teachers) may improve implementation.Promote EE in industry networks (events, P2P learning). |
| VECCI- Carbon Compass | | ✓ | | ✓ | | | | ✓ | <ul style="list-style-type: none">Funding of assessments by referring to SRSBVECCI programme staff provide referrals |
| SV- Smarter Resources, Smarter Businesses; Building Business Capability | | ✓ | | ✓ | ✓ | | | ✓ | <ul style="list-style-type: none">Co-funding to reduce financial barriers to (non-vetted) EE assessmentsIncrease implementation via access to finance and (non-vetted) experts for implementation.Promote EE in industry networks (events, P2P learning).No vetting of expert quality but passive referral to accredited lists in industry. |
| SV- Energy Efficient Office Buildings | ✓ | ✓ | ✓ | | ✓ | ✓ | | | <ul style="list-style-type: none">One-stop shop (project management, finance and vetted assessors, vetted suppliers/installers). |

| International | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|---|
| IBEE (and partners) - Energy Efficiency Programme for Small and Medium Enterprises | | ✓ | ? | ✓ | ✓ | ? | ? | ✓ | Create sector readiness and implementation by coordinating an ecosystem of support (financial sector, service providers, market/geography fit). |
| NYSERDA- Flexible Technical Assistance Program (FlexTech) | | ✓ | ✓ | | | | | | Expand EE assessments for complex projects (financial barriers, vetted experts). |
| Carbon Trust- UK Green Business Fund | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | | One-stop shop (project management, finance and vetted assessors/suppliers/installers). Maintain list of vetted products. |
| SCE- various programs (Continuous Energy Improvement; HVAC Optimisation; Direct Install) | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | One-stop shop (project management, finance and vetted assessors/suppliers/installers and products) for set programs Support general implementation with database of (not-vetted) EE service providers. |
| PG&E- various programs (rebates, financing and advice) | | | | | ✓ | | ✓ | | Support implementation by reducing financial barriers and knowledge of available rebates. |