Submission:

Clean Energy Finance Corporation Expert Panel December 2011

by the

Sustainable Energy Association of Australia

www.seaaus.com.au

Executive Summary

The Sustainable energy Association of Australia (SEA) fully supports the establishment of the Clean Energy Finance Corporation (CEFC) as a mechanism for increasing the uptake of commercial and demonstrations of renewable energy technology and energy efficiency in Australia. SEA sees the CEFC's role in catalysing private investment in renewable energy as addressing a significant market gap and as a method for reducing the financial barriers to the development of renewable energy products and projects.

While the SEA supports the creation of the CEFC, significant issues regarding its goals and objectives remain with a lot of uncertainty in the renewable energy segment as to what funds will be applied to, how they can be accessed and what form (debt or equity) that they will take. Business' experiences with Government funding have not always been satisfactory and the renewable energy and other relevant stakeholder segments see that the CEFC should avoid where possible the mistakes made in previous government programs supporting the sector.

In addition to the leveraging and catalysing private investment in clean energy and energy efficiency, the CEFC also needs to play a pivotal role in facilitating the transfer of knowledge and experience regarding these investments to the broader financial sector, which many businesses currently see as a key issue in seeking funding. This catalytic role is crucial in securing the long term future for funding clean energy technologies and businesses in Australia. In addition to commercial financing partners, the CEFC also needs to closely coordinate with a number of other Government funded programs and Government departments to ensure the alignment of both finance and services needed to boost renewable energy uptake in Australia.

The CEFC has a broad range of potential financial tools to achieve its objective of catalysing renewable energy investment to reduce Australia's greenhouse gas (GHG) emissions, including debt, equity and guarantees but should also be looking beyond just financial returns in its investment criteria. Including other criteria and assessing projects on not just financial benefits should be part of the process for assessing the suitability of projects using public funds. These other criteria should include emissions reductions, public benefits and energy market efficiency which reduce the costs of energy to the consumers, all of which create additional benefits in and of themselves as well as working to build a more sustainable economy and environment.

The inclusion of companies in the supply chain for renewable energy (technology providers) as well as energy efficiency companies and projects is a positive aspect to the CEFC's role and fulfills an existing gap in the market place. However, in dealing with these businesses it needs to be recognised that potentially they can face different market entry and adoption barriers to businesses involved in stationary energy generation. These market issues, while not covered in detail within this report are significant and the most important factors are highlighted.

SEA's endorses the approach taken in seeking input to the Expert Panel and supports the establishment of the CEFC.

Should any addition clarification or questions about this submission be needed, please contact:

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Overview

The Sustainable Energy Association of Australia (SEA) supports the Clean Energy Future (CEF) legislative package and energy market reform, including the creation of the Clean Energy Finance Corporation (CEFC) to assist with the funding of renewable energy projects in Australia.

In concert with other CEF measures, the CEFC will address the significant issues in financing the adoption of renewable energy projects in Australia and hopefully address the current barriers that are facing companies in seeking financing for clean energy projects.

The CEFC will leverage further enormous private investment and unleash innovation in Australia in energy efficiency savings across business activity, increased renewable electricity use facilitated by smart grids and networks supplying electric cars and public transport, and most importantly transformed cities.

In creating the CEFC, there needs to be an avoidance of an overly restrictive set of prescriptive policies in examining projects. While acknowledging the need for good governance, the CEFC must also avoid the traditional problems encountered by businesses engaging with Government investment in innovation and renewable energy. Typically companies receive the following responses from prospective funding organisations:

- too small / too big;
- too technologically risky / too derivative;
- not enough novelty / too much novelty;
- too small / too grandiose;
- no track record - partner with a University or CSIRO (but their R&D is too often at a very early, pre-commercial stage);
- really great idea but doesn't meet the guidelines;
- you have two weeks to make a submission and answer the 400 pages of questions;
- must be commercial in two years;
- too commercial, go seek funding somewhere else; and
- not green enough.

Businesses receiving these responses often perceive that the assessment of the technology or project has been undertaken by mid-level bureaucrats who are unlikely to have personal experience in working *within* the relevant sector and may not have the requisite technical knowledge or skills to appropriately assess the project. In addition to this, the more technically complex the project, the less likely it is to be understood and the research / evidence used to justify decisions is based on knowledge gleaned from Google rather than from a depth of personal experience and knowledge. This is an issue that the CEFC has an opportunity to address in its formation and is seen as a major issue for businesses in the renewable energy sector in Government programs accepting and understanding projects in the clean energy sector.

While acknowledging that this can be a difficult and complex task, the Department of Innovation, Industry, Science and Research's (DIISR) *Enterprise Connect* program creates a good model of bringing together a large base of experienced business people to review and deliver advice to growing SME businesses with at least a 3 year track record. Capacity already developed through Enterprise Connect can be utilized to assist the CEFC in its role in respect of clean energy, particularly through their Clean Technology Innovation Centre.

The SEA is keen to see the CEFC succeed and play a long-term role for the conversion of Australia to a low-carbon economy and reduce the impact of fossil fuel consumption on the environment, not only in the stationary energy generation sector, but across the whole economy. However, specifically in stationary energy, there is a need for support of renewable energy projects from both financial and policy perspectives and it is this latter issue that has been the cause of significant problems for renewable energy businesses throughout Australia.

In preparing this submission, SEA has consulted with Members as well as outside experts to form its views on addressing the questions raised by the review panel.

Investment facilitation

In examining the question of how the CEFC might facilitate investment, it is necessary for the CEFC to be clear about what it is to actually achieve with this investment. The current lack of clarity on the goals and objectives of the CEFC, which have not yet been defined or publicly clarified makes it difficult to provide more specific information on how these goals might be achieved based on the questions asked in the Expert Review Submissions document. In addition to this, for the CEFC to be an effective catalyst and facilitator, it must be seen as addressing the sector's needs and creating an open and transparent mechanism for access to create buy-in and engagement from its target market. Currently, SEA has seen significant confusion in the business sector about what the CEFC will achieve, how it will be achieved and what differentiates it from other Government programs. This confusion extends across a raft of Government programs that support businesses and clean technologies.

In order for the CEFC to facilitate private investment and act as a catalyst, the key issues that the end users must understand and be happy with can be summarized as:

- clearly defining the objectives and goals of the CEFC's investment;
- defining which businesses or projects that the CEFC will invest into;
- the criteria for investment in the project / company in both financial and non-financial measures;
- the investment process and the expectations of information for due diligence;
- how these investments will be made through debt, equity or a mix of these instruments; and
- what both the timing and the form of the exit strategy will be, and how the CEFC will realise its returns.

Without the acceptance and understanding of the CEFC, its role and objectives as well as *understanding how CEFC funding is different to that of other funding providers*, acceptance and uptake by business may diminish success of the fund, particularly with smaller businesses.

Objectives and goals of the CEFC

In order to set priorities in objectives with the CEFC, ultimately they must align with both the policy goals of the Government (financial return to CEFC, reduction of GHG emissions) as well as those of key stakeholder segments, which need to be better defined and be inclusive of customers. One key point is that there is currently excess base load generation in the market and new technologies which can provide mid-merit and peaking services are needed.

SEA's suggestions as to the goals see that in addition to these objectives, are set out below:

- Inclusion on non-financial metric in the investment criteria (for more detail see *Investment criteria other than financial viability* below);
- Increase the diversity of clean energy generation types available to supply the electricity grid through support of demonstration / showcase projects to provide commercial proof of success and reduce the perceived risk of clean energy technologies;
- Displacement of stationary generation GHG and other emissions which match peak load profiles rather than just additional base load generation i.e. an improvement in the clean quality of power, rather than just the addition of extra renewable energy megawatts;
- Increase the amount of distributed energy, rather than centralised generation, which reduces transmission and distribution losses and makes energy provision more efficient;

- Increase the provision of high penetration renewable energy to regional, rural and remote areas, including mine sites, and decrease reliance on expensive, liquid fuel generation providing benefits to the market in reduced power costs;
- Increase the level of load-shifting and reactive power sources such as energy storage on networks and reduce the cost of these to end users; and
- Australia's agreement to the APEC Honolulu Declaration committing to phase out "inefficient fossil-fuel subsidies that encourage wasteful consumption…" must be a key consideration by CEFC in how funds are directed.

Facilitation needs and role

The CEFC's key role in facilitation is one that we see as a co-investor in projects and companies through a number of different investment types as well as transferring skills and knowledge to the finance industry, of which there is a perceived lack by the clean energy industry.

In terms of co-investment, there are a number of potential funding mechanisms which are described in more detail in the section on *Catalysing private sector funds*.

More important than this role however, is creating an environment where there is a transfer of knowledge and skills from the energy market into the finance sector, which has been seen as resistant to adopting funding policies or strategies for renewable energy (with a few exceptions) and has been excessively risk averse in Australia compared to competing OECD markets. In addition to the energy markets, overseas financial expertise and experience in dealing with the development, demonstration and deployment of clean energy is also seen as a significant gap in the Australian financial market.

Of the market segments that are in greatest need of assistance in raising funding for projects, it is in the segment of businesses who are looking for project funding at less than $50 million. These smaller projects are essentially seen as almost un-fundable using conventional mechanisms without a premature IPO of direct government assistance. Yet they can provide a significant contribution to the market in the supply of small-scale, distributed energy.

Investment criteria other than simply financial viability

Due to the nature of the investments to be made by the CEFC, there must be a strong weighting toward public good in the investment criteria in that it must promote the reduction of energy consumption, particularly from carbon intensive sources, and ensure that booming Australian industries such as mining and construction, or industries in transformation such as manufacturing, do not build a legacy of carbon debt for Australia. However, as noted above, there are other considerations that go well beyond the Government's stated policy outcomes that should be considered in setting the investment criteria.

Factors other than financial viability that should be part of the investment criteria that should be in the assessment of projects include but are not limited to:

- GHG emissions reduction including CO_2, methane, nitrous oxides (NOx), based on a complete, cradle-to-grave lifecycle analysis;
- Other pollutant emissions reduced or avoided e.g. sulphur oxides (SOx), hydrocarbon, carbon monoxide, particulates, ozone;
- Inability to otherwise commercially access funds because projects are considered "too small";

- The degree to which non-sustainable resource use is avoided e.g. biogas vs. natural gas / coal seam gas, sustainably produced biofuels vs. non-sustainable biofuels;
- To address energy consumption and GHG emissions beyond the stationary energy sector (e.g. transportation, mining and agriculture) that can also be significant contributors to GHG emissions;
- Avoided electricity generation and transmission which will not only reduce emissions but provides other benefits e.g. avoided network and transmission losses of energy, reduced infrastructure requirements leading to cost savings and a reduction of pressure on price increases due to additional network transmission costs;
- Support of energy security for the area, including remote and regional areas which are not grid connected and reduce the reliance on liquid fuelled generation in these areas;
- Technology maturity, with less mature technologies being perceived as too risky by conventional investors even when they have been proven at a pilot / demonstration scale;
- Investment in known mature technologies (e.g. wind) should be avoided for large scale projects but should be available for smaller community / regional developments which find difficulty in funding from conventional sources; and
- Strategic alignment with government policies.

With the inclusion of any of these additional criteria in any investment assessment, there is a need to explain how they will affect investment decisions and whether the investment decision will be less likely because of their lack in a project or business' investment case.

CEFC partnerships with other organisations

The CEFC has significant opportunities for partnering with other organisations to deliver its objectives, however, care must be taken to ensure that the objectives are selected so that partnering opportunities can occur. That is, the CEFC can maximise its potential leveraging of partners by aligning its objectives with not only the right partners but also its target market to achieve its desired outcomes.

For example, in developing objectives in relation to supporting the deployment of newer technologies (past the R&D stage) or for energy efficiency projects, the CEFC's goals align well initially with two other organisations in acting as potential projects 'feeders': Low Carbon Australia (LCA) and the Australian Renewable Energy Agency (ARENA). In both of these cases, these organisations would be likely to support projects at an earlier stage of development or smaller scale than the CEFC but may create deal-flow for potential future investment by the CEFC. Other organisations that are involved with clean energy developments or funding may also be able to provide potential deal flow for the CEFC, including industry bodies and business chambers such as SEA, and government agencies such as AusIndustry and Enterprise Connect.

A key Federal Government initiative that the Government must ensure is more actively engaged with the CEFC is the National Broadband Network, because the NBN will be fundamental to a smarter, more energy efficient economy. The internet can the integration of networked devise will become an increasing factor in managing energy usage, both commercial and domestic. Globally, by 2013, 1.2 billion connected consumer electronics devices are expected in the more than 800 million homes with broadband connections. A few more years on and we can expect explosive growth in connected devices with each other and a medium for appliances to talk, share information and collaborate on the cheapest or most efficient time to draw power from the network, from the solar panel on the roof, or from the local wind farm. To gain most advantage in a clean tech economy in the 21st Century, we must see the NBN firmly and collaboratively engaged.

In addition to providing deal-flow to the CEFC, multiple funding partners are very likely to be necessary to spread the risk of investment as well as source additional money to leverage CEFC investments.

One area where the CEFC can make the most significant difference to the current market from partnering is to have the technical due diligence and risk assessment experience in order to overcome these perceived deficiencies in many of the finance providers currently in the market. Through collaborative partnering with those already having that knowledge, adopting it and transferring this knowledge to Australia and diffusing it through the financial markets.

Potential funding or investment partners might include:

- Venture capital funds;
- Investment / merchant banks;
- Superannuation funds;
- Retail banks;
- Sophisticated investors; and
- Large project development companies with an interest in renewable energy.

In creating these partnerships, the CEFC needs to ensure that it is meeting the needs of end users / finance consumers / customers. The key will be to identify partners who have the appropriate appetite for risk as well as ensuring that there is a transfer of knowledge and skills to these partners to appropriately understand the renewable energy industry.

Catalysing private sector funding

The question of how the CEFC will invest in projects is one of the most driving issues for companies involved in the renewable energy and low-emissions generation space and will dictate how potential commercial partners may collaborate with the CEFC in investing in renewable energy and energy efficiency projects.

For the catalysis of funding, CEFC will need a structure in which they will co-invest with partners. However, the CEFC also needs to disclose what their maximum proportion of funding of a project will be and the level of counterparty funding that the project proponent / business must be bringing to the table. This disclosure of the limit of CEFC funds should be different between debt and equity funding if that is the type of funding sought.

Catalysing funds from other investors can potentially be achieved by the CEFC through a number of different mechanisms:

- Loan guarantees that are provided for projects / investments to mitigate the potential risk for conventional financial institutions;
- Co-investment strategies involving both debt, equity and hybrid instruments that involve a syndicate of finance providers, where innovative structure can provide risk mitigation strategies such as:
    - Assuming the risk of 'First loss' debt, particularly at the early / construction phases of the project;
    - Creating different classes of debt within a syndicate / fund which has both senior and subordinated debt; or
    - Providing a preference share issue when dealing with equity investments as well as the issue of normal equity shares.
- Providing commitments at the initial raising of debt to refinance the debt when it becomes due or provide debt over longer investment timelines than conventional banks would do;

In determining what may facilitate or catalyse investment, the knowledge of what type of investment may be made, which can include but is not limited to:

- Debt investment through loans to a company or joint venture undertaking a renewable energy project;
- Equity investment in specific projects which return and annual share of profits rather than interest;
- Arranging project infrastructure bonds which create a rate of return based on the expected profits of the project;
- Provision of insurance where this is prohibitively costly to companies in deploying renewable energy projects;
- The provision of loan guarantees to project proponents to support other commercial debt facilities; and
- Refinancing of debt.

All of these mechanisms can play a part in creating the facilitation of investment in the target segment.

By undertaking these sorts of funding structures, there is a greater probability of catalysing additional funds due to the mitigation of the risk of more conservative financiers. SEA recognises that the higher the investment risk is for the investor, the more expensive the financing costs in both debt and equity for the investee. This is the nexus that the CEFC needs to address as one of its priorities in order to catalyse clean energy investment.

Existing funding barriers

In order for the CEFC to facilitate private investment, it is first necessary to consider the gaps that are currently not being fulfilled by the financial markets and which have led to the underinvestment in renewable energy projects. These market failures are effectively barriers to the financing of new renewable energy and energy efficiency projects which then prevent these projects progressing.

The key market gaps and failures that have been identified by SEA are:

- Reluctance to provide investment into small to medium scale renewable energy projects (under $50 million);
- Accounting for externalities that are incurred but not paid for by conventional fossil fuel consumption which have an implicit benefit to these generators on a capital and operating cost basis in not paying for the cost of any externalities – Australia's agreement to the APEC Honolulu Declaration should be a key consideration by CEFC;
- Information asymmetry which leads to risk perceptions that are not accurate, not based on real data, or underestimated benefits due to a lack of understanding or indeed a refusal to accept the reality of change. This is exacerbated by:
    - A lack of skills and understanding within the finance industry about the renewable energy industry;
    - Determining some technologies to be emerging technologies where they have been in use in other countries for many years;
    - High costs of due diligence processes for investors to assess the risk and investment profile.
    - The understanding of the value and utilisation of heat energy as a mechanism to displace other energy consumption (e.g. electricity); and
    - A culture of risk avoidance within many parts of the financial sector.

  These then reflect in an increased cost of financing to cover the perceived risk of renewable energy, including low leveraging ratios of debt to equity in the project;

- Difficulty in obtaining energy off-take agreements at the right long term price due to the lack of competitive buyers in the market place. This is exacerbated in locations not attached to the National Electricity Market (NEM) and where cross border transactions are sought;
- Overcoming the high capital intensity of many renewable energy technologies compared to thermal fossil fuel assets which have a lower capital cost but higher operational costs due to fuel consumption (capex vs. opex trade-off) which provides a timing based tax benefit for revenues;
- Split incentive issues in energy efficiency programs due to the lack of financing products within the market available to address this issue;

In order to facilitate renewable energy projects, the CEFC needs to identify projects not currently considered to be worthwhile (i.e. profitable enough) for conventional funding sources to support. Depending on the financial institution, this amount may be anywhere from $50 to $100 million as the lower limit for funding of renewable energy projects. This creates a significant gap in the funding market for small to medium scale renewable energy projects and subsequently the failure of projects to be adequately funded without having to rely on IPO / listing to raise sufficient capital to develop new renewable energy projects at scale.

The issue of the cost of externalities will to some degree be addressed by the introduction of a carbon price in 2012. However, the carbon price has only a limited application and does not cover all externalities incurred by liable parties and there are other parties which do not have such a liability and therefore do not bear these costs. Along with implicit and explicit subsidies built into the cost of electricity for many end users (particularly those in rural end regional areas); the issue of externalities skews pricing against the adoption of renewable energy in Australia.

The issues of information asymmetry and risk perception are some of the greatest barriers to the demonstration and deployment of clean energy projects based on the feedback that SEA has received from its members. As previously mentioned, this aspect is critical in bridging the finance gap within the Australian market and is likely only to be achieved with the transfer of expertise and knowledge to the finance sector.

No energy project can realistically be financed without an off-take or power purchase agreement (PPA) as spot market sales are not reliable enough to provide sufficient cash flow to support funding. However, in most cases there are only a limited number of potential purchasers of power so customer power effectively dictates the market price that is paid for energy fed into the grid. There is little an energy seller can do to mitigate this except through the minimization of distance from its intended use (i.e. minimization of transmission losses), which retailers must pay for but it is a factor that is unlikely to materially change the price of on-grid clean energy. However, without being able to obtain an appropriate PPA (whose costs are often fixed for long periods and potentially cannot benefit from market fluctuations), buyer market power can prevent some projects from going ahead.

Unfortunately the issue of high capital intensity is not a barrier that can be directly overcome, particularly as it is in the nature of renewable energy (passive rather than active energy conversion) and that due to supply contract structures within the energy industry, fossil fuel price variation is unlikely to have a significant price effect over the short to medium term. Effectively, this means that fuel costs are effectively fixed for financing period for both renewable and conventional energy sources, making renewable energy more capital intensive and providing a significant effect on the after-tax value of revenues. Fuel (a consumable) can be deducted on revenue account in additional to capital depreciation, while the majority of renewable energy costs can only be depreciated on capital account creating a tax-based timing benefit for fossil fuel based generation.

The issue of split incentives is covered in the section below titled *Energy efficiency issues*.

Other barriers to clean energy projects

In addition to the financial barriers to market entry noted above, generally clean energy also faces a number of non-financial barriers to entry which include

- Regulatory barriers including:
    - complex legislative interactions regarding the siting of projects,
    - state based variations in energy market rules,
    - local government regulations and by-laws,
    - planning / development approvals processes etc.;
- An unstable political and policy environment for renewable energy implementation and uptake in Australia with a rapidly changing series of schemes and programs at both state and Federal level that have created uncertainty about the longevity of support.
- Poor design of programs which have created financial advantages for certain technologies to the detriment of others and have created significant distortions and benefitted only small portions within the renewable energy segment. The prime example of this was the Solar Flagships program which only was for solar energy and benefitted a small number of large businesses and whose design initially excluded many areas that would have derived the most significant benefits from renewable energy at a smaller scale;
- Difficulty, delays and complexity in accessing network suitable network connections for renewables in some areas;
- Networks designed for large centralised generation and limited ability to cope with distributed generation such as renewables;
- Inconsistent levels of support between different renewable energy technologies from governments (technology bias).

The CEFC are unlikely to be able to significantly affect many of the factors above which pose some of the greatest barriers to implementing renewable energy projects. In respect of these barriers, SEA will not currently deal with the issues of overcoming these barriers within this report as it is a complex area that does not directly relate to the issues being considered here.

However, SEA is willing to provide additional information on the issues surrounding the non-financial barriers

Energy efficiency issues

When dealing with energy efficiency as a mechanism for the reduction of GHG emissions, it is a very different market and had different drivers and barriers to entry when compared to the energy market. In many cases the energy efficiency market are affected very differently in relation to capital investment and the generation of a return on investment.

The single largest barrier to energy efficiency uptake that has been identified is the split incentive problem where the person making the expenditure does not receive a benefit form that expenditure. While split incentives are primarily attributed to commercial tenancies, where the owner and tenant have very different incentives to undertake energy efficiency or not, it is not the only environment where this they occur. Research undertaken by SEA indicate that a similar problem can be seen in large organisation where savings are reflected in operational budgets but the costs are in the capital budget and in many cases these are the responsibilities of different individuals. In this case, the person responsible for the operations receives a benefit or reduced costs but the person responsible for the capital does not 'benefit' from this.

In order to overcome this problem, the costs incurred in undertaking energy efficiency projects, which are typically on capital account need to be made effectively as revenue costs, which then have a direct relationship to the benefits provided. In SEA's discussions with members and associates, we

have not yet identified any commercially available financial products which are suitable for this. In addition, there are likely to be tax implications regarding these structures which SEA is not currently aware of but regardless of this issue, a finance product that meets these needs is seen as potentially one of the best mechanisms for overcoming split incentives issues.

In addition to the split incentive barrier, other barriers to market entry have been identified by SEA's research these include:

- Confusion about energy efficiency accreditation schemes and the issue of quality assurance for providers;
- Lack of acknowledgement of the need for behaviour change programs to be included as part of a project;
- Ability for companies to guarantee savings from energy efficiency measures and obtain appropriate financing to provide guarantees of savings;
- Difficulty in measuring changes in energy use when energy efficiency projects are undertaken at the same time as other projects, particularly capacity expansion;
- Internal competition for the funding of projects within the capital budget;
- A lack of knowledge and experience within companies about energy efficiency benefits;
- Senior management attitudes to sustainability and climate change;
- Any others??

When considering investing in projects or businesses involved in energy efficiency, these barriers need to be considered in the potential for the uptake of the relevant goods and services.

CEFC integration with other Government initiatives

SEA sees that the CEFC will need to ensure that there is no overlap with existing funding mechanisms at a Federal level, which will require a close collaboration between many different departments, organisations and the CEFC. One issue raised by SEA members has been the confusion between the different Government support programs offered and how these can be utilised by businesses. This is due to the different program coming from different Departments and agencies without any clear centralised contact point of differentiation between these programs.

As noted above, partnerships and collaborations between the CEFC and other Government departments and agencies can provide the opportunity as a pipeline for deal flow. As described earlier, the Enterprise Connect program has in SEA's view been successful

Technology uptake and transitions

With the level of incentives and engagement across government, business and the broader community, transition to a clean technology future is not likely to be slow. Australia's economy for the last 20 years has witnessed rapid technological transitions. In relation to the next wave of change to low carbon technologies, the response is likely to be an even faster transition, favoured by government policy measures and regulation, buoyed by consumer sentiment, targeted by corporate and government operations, and soon to see increased demand as renewable energy arrives at grid parity across Australia.[1]

In understanding our actions to reduce greenhouse gas emissions, it is important we separate effects of economic downturn from any efforts to control emissions, and recognise actions to control

[1] Technology transitions always happen faster than the conventional market predicts http://www.pv-magazine.com/opinion-analysis/blogdetails/beitrag/technology-transitions-always-happen-faster-than-the-conventional-market-predicts_100004940/

emissions will cause some jobs in the future to change, but will build a net gain in new jobs, and will not be a net loss of employment.

Sustainable Energy Association of Australia SEA - the peak body for sustainable energy

SEA promotes the development and adoption of sustainable energy technologies and services that minimise the use of energy through sustainable energy practices and maximise the use of energy from sustainable sources.

SEA 2030 VISION

'On behalf of the people of Australia, the Association will vigorously promote the development and adoption of sustainable energy so that by the year 2030 more than 30% of Australia's energy use in and across all states and territories is displaced by sustainable energy practices so that energy demand is more than 30% below that measured in the year 2000, and that more than 30% of energy use is derived from sustainable sources.'

About SEA

SEA is a chamber of businesses variously promoting, developing and/or adopting sustainable energy technologies and services that minimise the use of energy through sustainable energy practices and maximise the use of energy from sustainable sources.

SEA is building relationships with businesses that aspire to be more sustainable in their own energy use, are providing the commercial solution to climate change through their products and services, or indirectly through their actions adopting more sustainable energy practices in their own business. Many businesses are acting to support the development of the best policy outcomes for the industry by becoming SEA members.

The role of governments is to build frameworks of governance that establish clear market signals for change and growth, and allow Australia's innovative businesses to respond and deliver market-based solutions.

A key role of SEA is to offer policy options to governments building those frameworks.

SEA is the only business peak body actively supporting substantive action on sustainable energy in every region and in all sectors of Australia's economy.

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