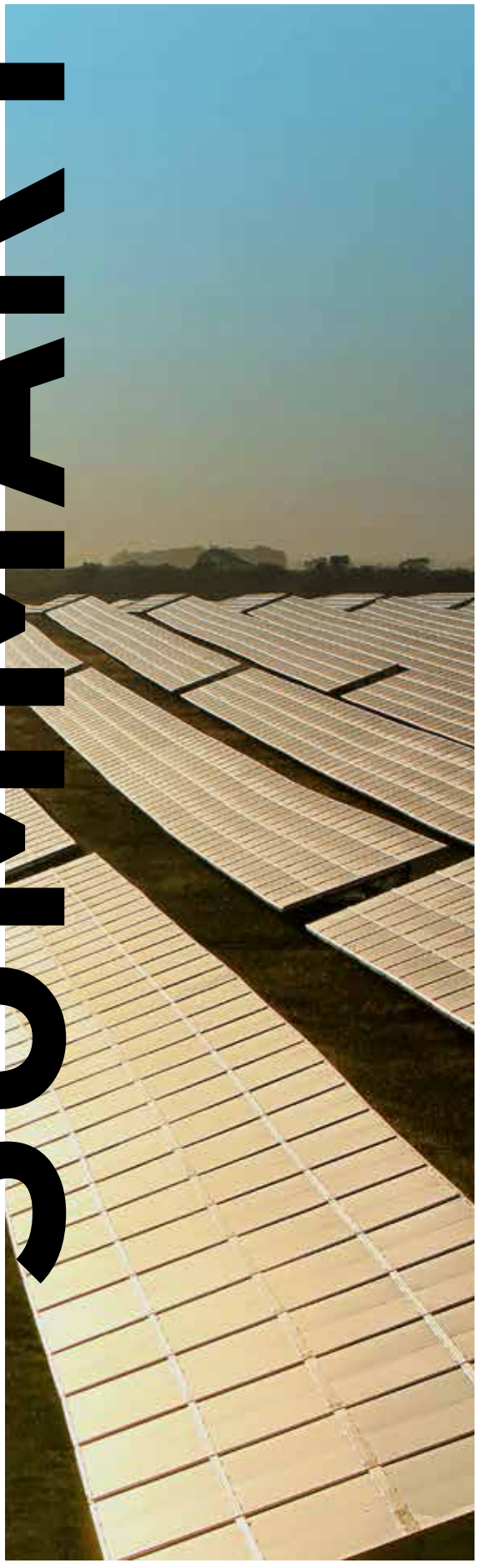
SUMMARY



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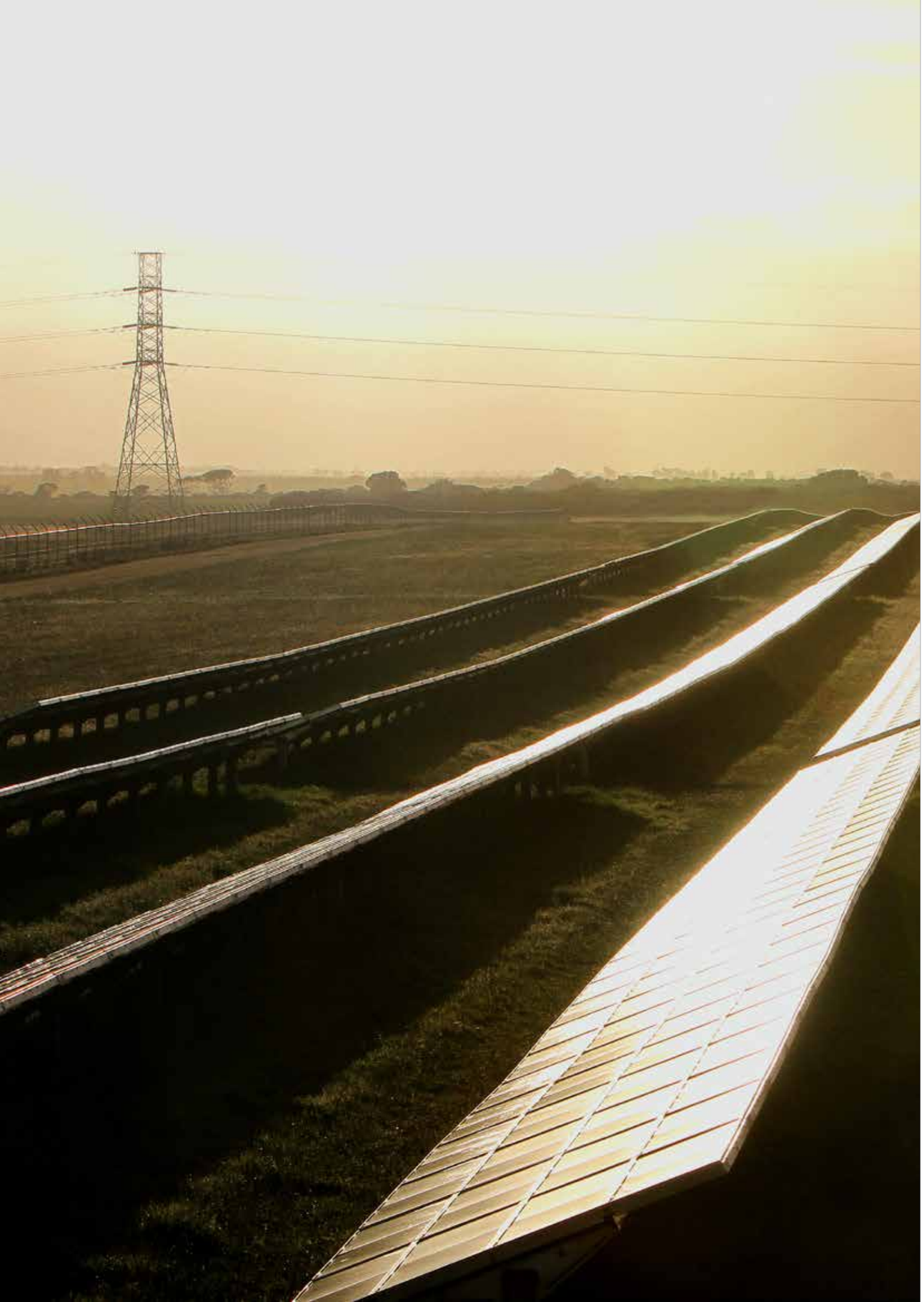
ARENA

Australian Government

Australian Renewable Energy Agency

Establishing the social licence to operate large scale solar facilities in Australia: insights from social research for industry



Introduction

The research represented in this document was funded by the Australian Renewable Energy Agency (ARENA) and conducted by Ipsos Social Research Institute. This report provides a high level summary of the *Establishing the social licence to operate large scale solar facilities in Australia: insights from social research for industry* report which applies the concept of a social licence to operate to the large scale solar energy sector in Australia. The report is based on research with the general public across Australia as well as specific research in communities living in close proximity to planned or established large scale solar energy facilities. This project breaks new ground in terms of setting out the preconditions and best practice principles for establishing the social licence to operate that will help solar project developers streamline the project development process.

The **social licence to operate (SLO)** is a concept that reflects community support for the operations of an organisation or development. It is generally considered that social support from community is critical for the long term sustainability of a development. SLO is context-specific, and varies with the industry in which it is applied and the social, political and economic conditions of the community. Establishing SLO is not simple due to being based on the diverse values, interests and concerns that contribute to community expectations.

There are important benefits to establishing SLO. By obtaining and maintaining SLO in the community, infrastructure projects are usually able to use resources more effectively, are less likely to encounter delays or obstructions to operations and generally find political support easier to establish.[1] In contrast, failure to establish SLO potentially presents financial risks through loss of productivity or damage to assets (e.g. through vandalism) and lost opportunities generally. Reputation damage associated with a lack of SLO can have other repercussions such as organisations encountering problems securing labour.[2]

This project was commissioned by the Australian Renewable Energy Agency (ARENA) and involved assistance and feedback from a number of renewable energy sector stakeholders.

Context

According to the Bureau of Resources and Energy Economics, in 2012-2013 approximately 13% of all electricity generated in Australia was renewable.[3] Solar photovoltaics (PV), despite experiencing a strong growth (49% growth across 2013 to 2014), accounted for 1.5% of total electricity generation in Australia over the same period.[4] This increase in generation has been largely a result of both Federal and state government policies over recent years including the Solar Cities Program, the Smart Grid/Smart City Program, as well as Verve Energy's privately-owned Greenough River Solar Farm.[5] All of these programs demonstrated the usage of photovoltaic technology on a large scale, and its applicability in utility businesses.

Solar energy is considered one of the most appropriate forms of renewable energy for use in Australia. Research into the levels and uniformity of solar radiation has demonstrated that Australia has outstanding, consistently-distributed solar resources nationwide, indicating that solar energy has the potential to be an excellent source of renewable energy for Australia.[6]

The social research on which this report is based revealed widespread support for solar energy as a source of energy for electricity generation in Australia, 78% indicated that they are in favour of large scale solar energy facilities. Support for domestic solar panels is even higher, with 87% saying they were in favour of solar panels on homes.

The building blocks of the social licence to operate large scale solar facilities in Australia

The social research identified five main themes that are key to establishing SLO for large scale solar facilities. **These building blocks are:**

Reliability and efficiency | **Visual impacts** | **Environmental impacts** | **Economic and employment impacts** | **Health impacts**

It is important to note that the overall SLO is not simply an aggregation of community views on each theme. Rather, the interaction of the public's perceptions of the advantages and disadvantages of large scale solar energy are critical to informing SLO. Despite recent innovations in large scale solar energy in Australia, the sector is still at a relatively early stage of development. This is an important factor when considering SLO; while most Australians are aware of large scale solar energy, many do not know a great deal about the impacts of these facilities.

Reliability and efficiency of large scale solar energy

While Australians are enthusiastic about large scale solar energy, many don't feel informed about its efficacy and ability to become a significant provider of energy.

- **77%** of Australians agree that large scale solar facilities can be a significant source of energy to help meet the nation's energy needs (**19%** neither agree nor disagree, or don't know).
- Although the majority (**63%**) agree that large scale solar can provide a consistent supply of electricity, more than a quarter (**28%**) neither agree nor disagree, or don't know.

Key approaches to driving support relating to efficiency and reliability

- Couch information about the size of the facility in terms that are readily understandable by the populace (as well as in technical terms)
- Provide information about connections to the grid, and where the energy produced by facilities will be used
- Provide information about the efficiency of solar in comparison to other forms of energy generation
- Provide information about the efficiency of solar panels (or other solar technologies)
- Provide information about land use in comparison to energy output
- Provide evidence that large-scale solar can provide a reliable and consistent supply of energy to the grid
- Provide evidence that solar can compete on a par with other sources of renewable energy in terms of reliability and efficiency to produce a consistent supply of energy

Visual impacts of large scale solar energy projects

- Australians are divided about perceptions of the visual impacts of large scale solar energy facilities with similar proportions agreeing (**30%**) and disagreeing (**26%**) that these facilities have a negative visual impact on the local landscape.

Key approaches to driving support relating to visual impacts

- Images of large scale solar facilities are relevant and important for communities from the very initial stages of projects
- Use images from a variety of angles and scales to include aerial shots as well as those images in closer proximity
- Ensure all printed and electronic communications include images of similar large scale solar facilities
- Ensure all information sessions are accompanied by images of similar large scale solar facilities
- Large scale solar facilities have rarely been seen, exposure to a variety of images is required
- Domestic scale often valued, demonstrate potential similarities between domestic and utility scales
- Describe the current function of the land proposed to hold the facility
- Describe what steps are needed to prepare the land for the facility
- Describe and show innovative technologies involved in large scale solar

Environmental impacts of large scale solar energy

- Around three-in-five (**63%**) Australians believe that increasing the number of large scale solar facilities would reduce Australia's carbon emissions, and just more than half (**53%**) agree that large scale solar facilities have a positive impact on the environment.
- However, when thinking about the local environment surrounding large scale solar energy facilities, Australians are less sure about the impacts. While a third (**34%**) disagree that large scale solar facilities have a negative impact on local ecosystems (**14%** agree), more than half (**53%**) neither agree nor disagree or say they don't know.

Key approaches to driving support relating to environmental impacts

- Be clear about localised environmental disturbances associated with establishing large scale solar energy facilities
- Be mindful when preparing messages about environmental impacts to address both short-term and long-term impacts
- Be mindful when preparing messages about environmental impacts to address both local and wider environmental impacts
- Images of large scale solar energy facilities assist communities to envisage the infrastructure and may help alleviate fears related to environmental impacts
- Broader environmental benefits need to be highlighted
- Communicate environmental disruption minimisation or mitigation approaches
- Caution: the benefits of CO_2 reduction will not resonate with those who are sceptical about climate change impacts; understanding sentiment towards climate change can be useful
- Ensure messages include any information about environmental rehabilitation on, or proximate to, the site
- Concentrate on long-term and wider environmental benefits of large scale solar energy

Economic and employment impacts of large scale solar energy

- Almost half of Australians (**48%**) see the presence of large scale solar facilities as being economically beneficial, agreeing that their presence has a positive impact on local economies. However, a further **46%** neither agree nor disagree, or don't know whether such facilities impact the local economy.

Key approaches to driving support relating to economic and employment impacts

- Ensure that local residents and businesses are provided with opportunities for involvement in projects
- Use a range of media to communicate opportunities to residents
- Ensure that concerns around any influx of workers to small towns are managed
- Set clear expectations around the impact (or lack of impact) on local electricity prices
- Provide realistic information about project size and timelines
- Provide information about the job and contracting opportunities at each stage of the project
- Ensure that opportunities are seen to be "pushed" into the community via local employment agencies in addition to more passive approaches such as advertising
- Provide evidence of the economic impacts of construction of large scale solar facilities in the local community

Health impacts of large scale solar energy

- Almost half of Australians are unsure about whether large scale solar facilities have a harmful impact on community health; **47%** either don't know or neither agree nor disagree that large scale solar facilities could have a negative effect on the health of the people living nearby. However, two-in-five (**40%**) disagree that large scale solar has a harmful impact, and **13%** agree.

Key approaches to driving support relating to health impacts

- Health issues generally of a lesser importance to community than other themes, still important to provide information, consider promoting health information with environmental information
- Messaging to focus on basic health and safety assurances
- Utilise established overseas examples to address fears of latent long-term health risks
- Promote the health and safety features of large scale solar energy facilities that have better outcomes / avoid issues associated with non-renewables: air pollution, mining accidents, explosions etc.

Community engagement planning

Effective and meaningful community engagement is central to establishing, building and maintaining social licence to operate for large scale solar energy facilities. Thoughtful and well delivered community engagement programs will strengthen communities and improve the social sustainability of projects and therefore contribute to the success of large scale solar energy projects.

Appropriate and timely community engagement can reinforce and build community support for renewable energy projects and even ameliorate opposition of such projects.[7] With this in mind, understanding community expectations, concerns and considerations about what are regarded as the critical issues relating to large scale solar energy projects (what are referred to as the building blocks of a SLO) is critical to helping inform the content of community engagement activities.

Best practice community engagement requires an approach that is:

- tailored to the specific needs of a community;
- long-term;
- initiated early in the process;
- flexible; and
- demonstrates a genuine commitment to the principles of community engagement from the developer.

Many resources are freely available to guide best practice community engagement and assist developers and government to design community engagement plans. The International Association of Public Participation (IAP2) in particular provides many resources. IAP2 identifies a spectrum of public participation approaches: *inform, consult, involve, collaborate* and *empower*; the goals, resources and community needs of any one project will define which engagement approach or approaches will be optimal.

It is widely accepted that more collaborative forms of engagement with communities can facilitate establishment of trust between the community and infrastructure developers and thus contribute to establishing SLO. However, given the relatively low levels of familiarity with large scale solar energy among Australians, engagement tools that comprehensively cover *inform* and *consult* stages of engagement approaches are highly relevant.

References

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About ARENA

ARENA was established by the Australian Government to make renewable energy technologies more affordable and increase the amount of renewable energy used in Australia. ARENA invests in renewable energy projects, supports research and development activities, boosts job creation and industry development, and increases knowledge about renewable energy.

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