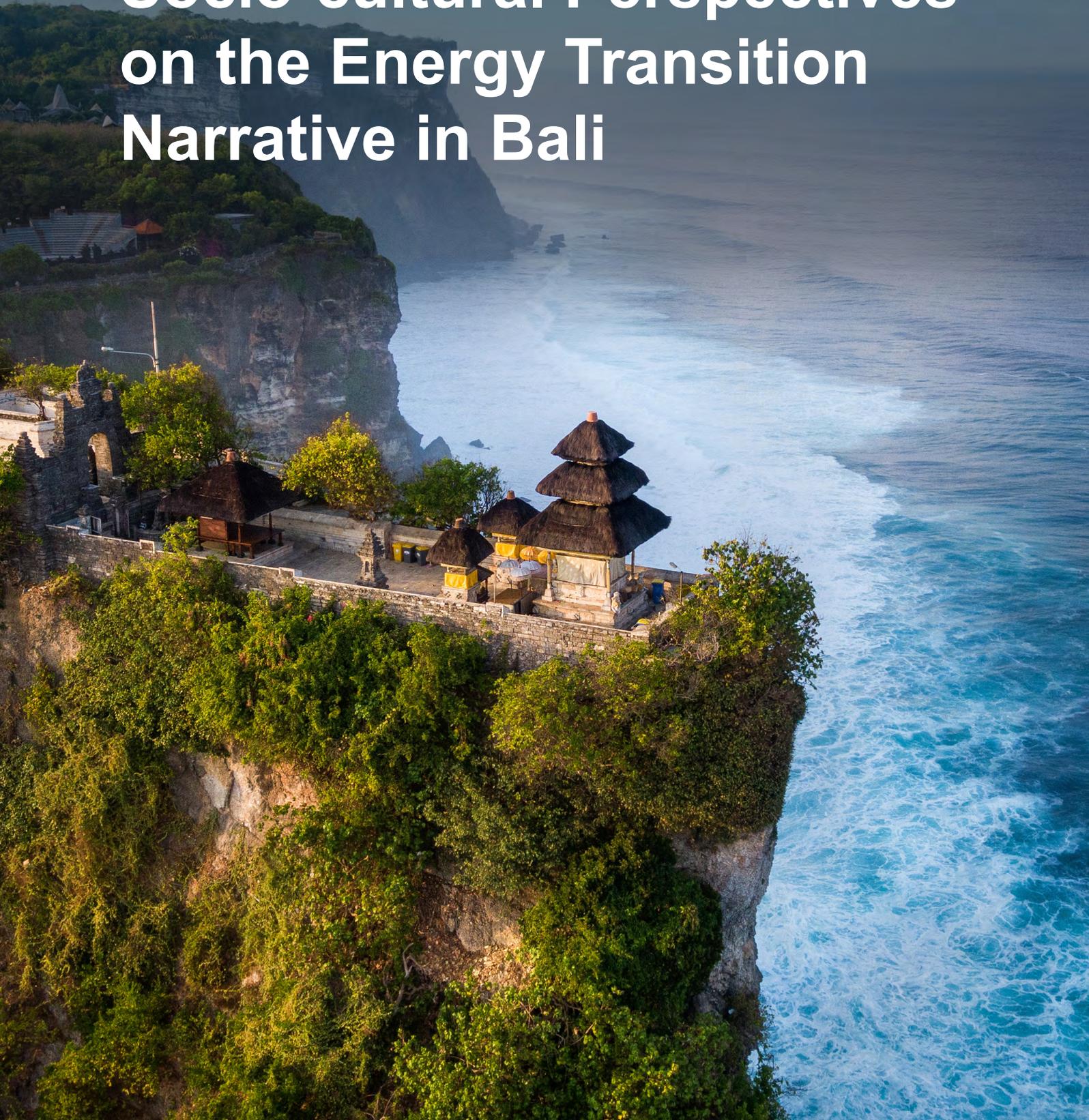


CASE Insights:

# The Influence of Socio-cultural Perspectives on the Energy Transition Narrative in Bali



## Imprint

### The Influence of Socio-cultural Perspectives on the Energy Transition Narrative in Bali

#### In the context of CASE

The regional programme, “Clean, Affordable and Secure Energy for Southeast Asia” (CASE), is jointly implemented by GIZ, and international and local expert organisations in the area of sustainable energy transformation and climate change: Agora Energiewende and NewClimate Institute (regional level), the Institute for Essential Services Reform (IESR) in Indonesia, the Institute for Climate and Sustainable Cities (ICSC) in the Philippines, the Energy Research Institute (ERI), Thailand Development Research Institute (TDRI) in Thailand, and Vietnam Initiative for Energy Transition (VIET) in Viet Nam. These organisations have set the objective of changing the narrative for energy transition. In Indonesia, CASE is anchored to the Ministry of National Development Planning/National Development Planning Agency (Bappenas) – Directorate of Electricity, Telecommunications and Informatics, and jointly implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH and the Institute for Essential Services Reform (IESR).

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## Key Take-Aways

Bali has the potential to become a leading province for clean energy development in Indonesia. This is due to its strong commitment to the energy transition. In accordance with the Development Working Group (DWG) meeting that took place in Bali in August 2022, the Clean, Affordable and Secure Energy (CASE) for Southeast Asia programme held a series of sharing sessions and discussions to learn from different stakeholders in Bali: (1) G20 DWG meeting on “Sustainable Economic Recovery by Promoting Solar PV Development: Maximising economic benefits and utilising transformational financial mechanisms in support of rooftop solar PV deployment in Bali”; and (2) CASE Dialogue with CSO and the Public in Bali on Energy Transition Topics. Looking at the discussions through the socio-cultural perspective, narrative plays an important role in achieving the energy transition goals. The key take-aways derived from the discussions were:

1

The Covid-19 pandemic has provided momentum to accelerate energy transition through sustainable economic recovery initiatives. Bali, as one of the most impacted regions in Indonesia, has the potential to support sustainable economic recovery by prioritising energy transition, particularly through solar PV development.

2

The clean energy transition requires not only technological innovation, but also a socio-cultural accompaniment to support the pooling of different stakeholders and accelerating the energy transition development. This can be achieved by having energy transition narratives that resonate with the existing socio-cultural landscape.

3

Energy transition requires visionary national and sub-national government action, as well as an empowered citizen. Hence, integrating socio-cultural perspectives could contribute to achieving a just and inclusive energy transition, because it opens an opportunity for community involvement and creates a sense of belonging within the community.



## Overview

In the last decade, several studies have focused on the impact of narratives on the framing, implementation and evaluation of energy policies.<sup>1</sup> Narrative itself is defined as an arena of meaning-making, in which individuals connect to the public and the social world.<sup>i</sup> It can influence what an individual thinks about the world, and thus narrative is central to understanding and engaging in social change.<sup>ii</sup> A narrative could influence public opinion and lead perceptions toward a certain goal. When it comes to energy transition, the narrative could mean the difference between a 100% renewable energy future, or a fossil-fuels future.

The current general premise is that the Net Zero Emissions (NZE) target must be accelerated to reduce the impact of global warming and related changes in our climate. The IPCC's report mentions that achieving NZE by 2050 is our best chance of tackling climate change and limiting global warming to 1.5 °C.<sup>iii</sup> However, reaching this target is not something that is easily or quickly attainable. Indonesia, for example, set its NZE target for 2060.

In Indonesia, fossil fuels are still perceived as a reliable source of energy to produce electricity. The country's total energy supply is dominated by oil, coal, and natural gas.<sup>iv</sup> In 2020, about 82% of power generation came from fossil fuel sources (62% coal, 18% natural gas, and 2% oil), 6% came from hydroelectric, 6% came from non-hydro renewable energy, and 4% came from other sources, such as biomass<sup>v</sup>. Despite having a renewable energy target of 23% in the total primary energy supply (TPES) by 2025, and 31% by 2050, the progress has been slow, with only around 11.2% in 2021.<sup>vi</sup> Policy inconsistency, inadequate technological availability and human capacity, lack of access to sustainable energy financing, and coal dependency are among the top four challenges for an energy transition in Indonesia.

<sup>1</sup> For additional reading on the studies of narratives in energy policies see:

(1) Sovacool, B.K.; Ryan, S.E.; Stern, P.C.; Janda, K.; Rochlin, G.; Spreng, D.; Pasqualetti, M.; Wilhite, H.; Lutzenhiser, L. Integrating social science in energy research. *Energy Res. Soc. Sci.* 2015, 6, 95–99.

(2) Janda, K.B.; Topouzi, M. Telling tales: Using stories to remake energy policy. *Build. Res. Inf.* 2015, 43, 516–533.

(3) Randall, R. Loss and climate change: The cost of parallel narratives. *Ecopsychology* 2009, 1, 118–129.



Energy transition requires a multi-level approach. Technical assistance alone will not create an enabling environment for stakeholders to invest in energy transition efforts. In addition to political support, a socially constructed narrative plays a role in creating a transformation pathway to gain support from society. Understanding the socio-cultural landscape could help in constructing an effective energy transition narrative that resonates with the existing meta-narrative within the community to drive change. An energy transition narrative that is based on research and data is needed to accelerate renewable energy adaptation in Indonesia. But more importantly, a narrative that reflects the same value as the culture, local wisdom, and beliefs of society will be a narrative that the public can easily trust and accept.

A good example of an energy transition narrative that resonates with the community's local culture can be found in Bali. The energy transition narrative in Bali very much resonates with the objective of protecting the environment, both at the level of the community and the sub-national government. The narrative of protecting the environment is nothing new to the Balinese community. The idea is embedded in their identity as local wisdom. Many elements of nature are considered sacred by the Balinese community, such as the forest, sea, sun, mountains, and springs, among others. The integration of Balinese local culture and values in the energy transition-related policies, and into the energy transition narrative allows the Balinese community to have a sense of belonging to the narrative. This, opening a bigger opportunity for community participation in energy transition efforts. On top of supporting the development of energy transition, the community's participation in the energy transition narrative is critical in achieving a just and inclusive energy transition.

Derived from the two events mentioned above, this edition of CASE insights addresses the key take-aways for how Bali can maximise sustainable economic recovery post-COVID-19 by promoting energy transition, particularly through solar PV development, and the way in which socio-cultural perspectives and narratives play an important role in the energy transition in Bali.

## The Covid pandemic has increased the urgency of supporting sustainable economic recovery and the advancement of energy transition

Investment in the sustainable energy transition is important in boosting inclusive economic growth. This is in line with sustainable development goals (SDGs) and climate crisis mitigation. Yet, the Covid-19 pandemic has slowed the process. Just two years after the pandemic hit, the world experienced the deepest global recession since World War II. The Great Lockdown, as the International Monetary Fund calls it, contracted the global economy by 3.1% in 2020 with high unemployment rates, increased poverty, and expanded inequalities.<sup>vii</sup>

The pandemic has pushed Indonesia to a technical recession at the end of the third quarter of 2020. But, the Indonesian economy began a slow recovery in the second quarter of 2021, with growth reaching 7.07% YoY, according to data from Statistics Indonesia 2021.<sup>viii</sup> However, in the third quarter of the same year, the Indonesian economy again recorded a slowdown to 3.51% YoY as a result of the emergency social restrictions imposed to contain the delta variant outbreak in July and August 2021.<sup>ix</sup>

The Government of Indonesia (GoI) strives to bring economic recovery for Indonesia's long-term prosperity through the National Economic Recovery (*Pemulihan Ekonomi Nasional*/PEN) Programme. In 2020, the Indonesian government allocated a total of IDR695.2 trillion (USD\$47.7 billion) for the PEN programme. In 2021, the PEN programme allocation increased by 7.1% to IDR744.77 trillion<sup>x</sup> (USD\$51.3 billion). The number of Covid positive cases declined to around 200 daily cases as of December 2021, and the allocation for 2022 was reduced to IDR451 trillion (USD\$31.1 billion).<sup>xi</sup> Furthermore, the allocation for 2022 now only targets three sectors: health, social protection, and several fiscal facilities for MSMEs and businesses.

Findings published in CASE Indonesia's report on green recovery, entitled [Supporting National Economic Recovery through Power Sector Initiatives](#), mentioned that only a small amount (around 1%) of the 2020 PEN budget was allocated toward green recovery initiatives. Most of the allocations were directed toward state capital injections, or state equity participation, for state-owned utility and energy companies, such as *Perusahaan Listrik Negara* (State Electricity Company or PLN) and Pertamina. Additionally, of the 2021 PEN budget, only around 0.94% was allocated to low-carbon development initiatives.<sup>xii</sup>



According to the study, there are two reasons why green recovery initiatives have not been prioritised: limited fiscal space and longer pandemic containment. However, now that Indonesia has transitioned into the recovery phase, the country must be able to shift its focus toward economic recovery for the longer term, so that it can take advantage of the long-term environmental and social benefits.

In September 2021, the Ministry of National Development Planning (*Kementerian PPN*), through its National Development Planning Agency (*Bappenas*), released a report entitled “Green Recovery Roadmap Indonesia 2021-2024 - Building Back Better Low Carbon Development Post Covid-19”. In this report, three sectors are proposed for green recovery initiatives: waste, energy and plantations. Looking deeper into the energy sector, it is further proposed that the government erect solar PV rooftop installations on 70 ministry and agencies buildings, to comply with the General National Energy Plan (*RUEN*). This initiative will bring a number of benefits that include economic, employment, and climate.

In line with these efforts, the same CASE Indonesia’s report on green recovery proposed three measures that are feasible for Indonesia to rebuild a cleaner economy and pave the way for progress toward climate action. These measures are:

- Create a public procurement programme to install rooftop solar PV on government buildings;
- Create a public procurement programme to install rooftop solar PV on subsidised housing; and
- Incentivise small-scale rooftop solar PV adoption.

These three measures could be implemented at the national and provincial scales. Bali, for example, as one of the provinces that is heavily impacted by the Covid, and currently in the global spotlight due to the many G20 group meetings that have taken place there, including the G20 Summit in November 2022, has the potential to adopt these measures and prioritise the development of renewable energy in support of its sustainable economic recovery. Not only is this result of sustainable energy transition being one of the three primary pillars of the Indonesia G20 2022 Presidency, but also because Bali believes in harmonic integration between economic development and environmental preservation, as reflected in Bali’s development vision, *Nangun Sat Kerthi Loka Bali* and *Bali Kerthi Economy*. These have been adopted by Bappenas as references for developing the Roadmap Towards a New Era of Bali: Green, Resilient, and Prosperous, which supports Indonesia’s national development agenda.

# Energy transition development requires technological endeavours along with socio-cultural approaches

As a small island with a population of 43.2 million people, Bali has the resources, both natural and human to advance its renewable energy adaptation, particularly through rooftop solar power development. The island has consistent and lengthy sunny days, with 12 hours of daylight throughout the year, and average solar irradiation of 5.3 kWh/m<sup>2</sup> per day.<sup>xiii</sup> In terms of technical potential, a study by the Institute for Essential Services Reform (IESR) found that solar PV rooftop installations in Bali can provide up to 10.9 GWp, whilst ground-mounted solar panels can provide up to 26.4 GWp.

## Bali's solar energy potential

### Distribution

Specific photovoltaic power output

more than 4.40	11.9%	<div style="width: 11.9%;"></div>
4.40-4.20	16.0%	<div style="width: 16.0%;"></div>
4.20-4.00	16.7%	<div style="width: 16.7%;"></div>
4.00-3.80	15.8%	<div style="width: 15.8%;"></div>
3.80-3.60	17.0%	<div style="width: 17.0%;"></div>
3.60-3.40	14.5%	<div style="width: 14.5%;"></div>
3.40-3.20	6.8%	<div style="width: 6.8%;"></div>
less than 3.20	1.3%	<div style="width: 1.3%;"></div>
	100.0%	

### Resource potential:

- Decent irradiation : 3.2–4.4 kWh/kWp
- Median : 3.9 kWh/kWp



### Technical potential:

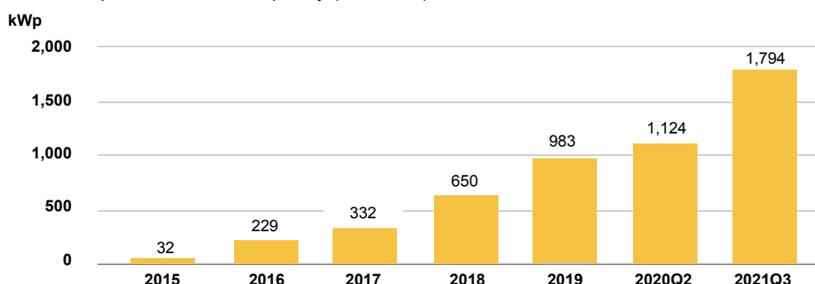
- Rooftop solar : 3.2–10.9 GWp (IESR, 2019)
- Ground-mounted : 26.4 GWp (IESR & GEI, 2021)

## Status

**Installed capacity : 4.98 MWp by Q2 2022 (ISS 2022)**

- Rooftop solar : 0.18 MWp, 192 users (by Sept 2022)

Bali rooftop solar installed capacity (PLN user), 2015-2021Q3



Source: PLN UID Bali (2021)

### Project pipeline:

- Utility Scale : **2x25 MWp**, Bali ground-mounted PV
- APBD : **22.4 MW** in 2022/2023 (ISS 2022)

### Figure 1

Bali can lead as the first solar island in Indonesia

Source: Kurniawan, 2022<sup>xiv</sup>

If this potential is fully realised, then the development of renewable energy (RE) in Bali is expected to help achieve the national renewable energy mix target of 23% by 2025. Compared to other schemes, the deployment of solar PV rooftop installations can hasten the achievement of the renewable energy mix target. This is particularly due to rooftop PV being rather quickly deployable (less than one year), when compared to utility-scale solar or other RE technology that requires centralised planning by PLN and a long development cycle. Considering the potential capacity of rooftop PV in Bali, it can fulfil Bali's one gigawatt (GW) need for electricity. According to data from the Governor of Bali, the island is planning to add 4.287MW of rooftop PV.

No.	Location	Capacity (MW)
1	Bali Mandara Toll	0.400
2	Nusa Penida	3.500
3	I Gusti Ngurah Rai International Airport	0.155
4	Petrol stations across 9 regencies	0.132
5	Coca-Cola Company	Consultation process
6	Official government buildings	
	1. BKPSDM	0.025
	2. BPBD	0.025
	3. Karangasem's regent office	0.050
<b>Total</b>		<b>4.287</b>

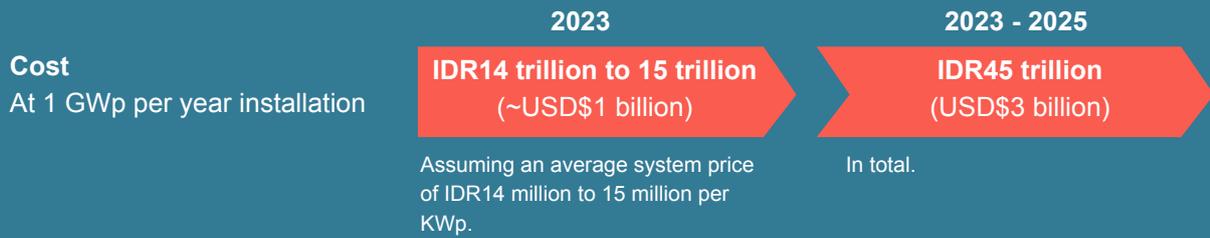
**Table 1**  
Solar PV installation plan in Bali

Source: Governor of Bali, 2022<sup>v</sup>

Rooftop PV development has a number of positive impacts on green recovery. Private sector consumption and participation will open investment opportunities in the PV business. PV installation is also labour-intensive a 2,000 unit (9.1 MWp) residential solar deployment may involve 270 direct jobs, 270 indirect jobs, and 170 induced jobs.<sup>xvi</sup> According to IRENA, solar PV provides the highest renewable energy employment, as compared to other areas, with 3.6 million jobs from 2012 to 2018. This data underscore the fact that solar PV development is labour-intensive and could open a significant employment opportunity, with new skilled labourers in the future. For the long-term, training and vocational programmes can be developed and tailored towards RE-related occupations. Technical universities and vocational schools' could enrich their curricula with RE-related specialised subjects and courses to mitigate a gap in labour supply and demand.

## Solar PV for Green Recovery

To support green recovery in Indonesia, IESR developed a “Surya Nusantara Programme” proposal. The programme seeks to accelerate the development of rooftop PV as a green recovery strategy. It proposes public procurement to install rooftop solar systems on subsidised housing: (PLN’s 450 VA and subsidised 900 VA user groups), with an annual installation target of 1 GWp until at least 2025, to meet the government’s 3.6 GW PSN target.



**Adoption alternative** Given the budgetary constraints, the government could option for a lower annual installation target.

### Programme impacts

-  Jobs support and creation: ~30,000 jobs
-  Support the local PV industry through investment opportunities and industry chain development
-  Access to clean and free electricity
-  Reduce pressure on PLN power plant investment
-  Reduce subsidy expense by IDR1.3 trillion per year
-  Reduce GHG emission by 1.05 million tonnes per year
-  Open the opportunity to develop rooftop PV by 12 GW to 15 GW in 2030
-  Skilled workforce creation in the area of green jobs

Source: (Tumiwa, 2020)<sup>xviii</sup>



### The relevance of Balinese socio-cultural aspects in the energy transition narrative

Given the foregoing in the process of energy transition and achieving the full potential of it, there is one perspective that is often overlooked: the role of culture. Energy transition challenges should not only be met by deploying the best available technology, but also by establishing social and cultural support, especially to ensure a just and inclusive energy transition.<sup>xix</sup> The energy transition process in Bali is an example of how local culture and values contribute significantly to supporting the pro-environment behaviour movement in a cultural context.

It is generally known that Bali is rich in traditional culture that can be seen in the community's everyday life, from the daily offerings made by Balinese Hindus to thank the *Sang Hyang Widhi Wasa* in praise and prayer, and the *melukat* or purification ceremony, to *Nyepi* or day of silence, where Bali shuts off for 24 hours. To understand why Balinese society has a strong attachment to its local wisdom and traditional cultural values, it is necessary to look at Bali's historical context. Back in the 1930s – during the Dutch colonisation – the Dutch East Indies administration enacted the *Baliseering* policy. The *Baliseering* or *Balinisation* policy obliged the Balinese community to carry out their traditional cultural practices in their everyday lives under the Dutch administration's supervision, and forbade the community from adopting any foreign culture in order to preserve the Balinese identity<sup>2</sup>. Consequently, the policy influenced the Balinese community's meaning-making process with regard to the importance of preserving Balinese traditional cultural practices and values, as part of keeping their distinct identity. At the government level today, the impact of *Baliseering* is reflected in the policy-making process in Bali.



***Nyepi*, a traditional cultural practice that contributes to the reduction of greenhouse gas in Bali**

*Nyepi* is a celebration of the Balinese Saka calendar new year. *Nyepi* comes from the word *sepi* or *sipeng*, which means “lonely, quiet, silent, zero, empty, no crowd, no noise, no activity”. Thus, unlike most other new year celebrations with loud noises, fireworks, and festivities, *Nyepi* is seen as a moment of self-reflection. The celebration includes *amati geni* (do not light a fire), *amati karya* (no activities), *amati lelungan* (not travelling), and *amati lelanguan* (no entertainment). For 24 hours, everyone in Bali (except essential services) stops their daily activities and stays at home. Lights are not allowed to be turned on during *Nyepi*.

*Nyepi* is meant to be a day of reflection, thus no distractions are allowed. Today, many people see the value of *Nyepi* not only for religious purposes, but also from an environmental perspective. During *Nyepi*, a study found that electricity consumption in Bali dropped by up to 60%, and an analysis by the Intergovernmental Panel on Climate Change (IPCC) also reported a 33% reduction in greenhouse gas emissions on the day.<sup>xx</sup>

Although it is just for one day, the key take-away is how Bali’s unique observance of *Nyepi* has an impact on reducing pollution. *Nyepi* is one example of Balinese traditional cultural practices that still exist today where the practice has adapted from time to time following changes in civilization. For example, *amati geni* literally means “do not light a fire”. But in the current practice, *amati geni* is expanded to not turning on any kind of light, including an electric lamp. This way, the value of the practices remains relevant to the people and could be used to address current crises.

A construction of a human-centred and eco-friendly model of society that recognises the interaction between humans and their environment, and the intrinsic link between cultural and biological diversity, is integrated into the government's development vision. Bali has a development vision called *Nangun Sat Kerthi Loka Bali*, which is derived from the narrative of Balinese local value of the six elements in human life, including nature. "Sat" means six and "Kerthi" means efforts to maintain purity or balance of life, where everything in the universe is closely related to one another. *Sat Kerthi* means six efforts to maintain the balance of the universe. If translated, *Nangun Sat Kerthi Loka Bali* essentially has the meaning of "building Bali with the six elements of life (*Sat Kerthi*) to achieve harmony and prosperity." Through this vision, the government is encouraging Balinese community involvement in the green economy and energy transition in an effort to protect the environment.

On the green recovery, Bali is implementing its Economic Plan through what the government called *Bali Kerthi Ekonomi*. The *Bali Kerthi Ekonomi* is also derived from the Balinese local wisdom narrative. It highlights the importance of an economic development that sustains harmony with nature, is environmentally friendly, maintains local wisdom, and is based on local resources to achieve high quality with added value – a competitive, resilient, and sustainable economy.

The narratives of *Nangun Sat Kerthi Loka Bali* and *Bali Kerthi Ekonomi* places environmental protection at the centre of Bali's development reflecting one part of the Hindu-Balinese local wisdom, known as *Tri Hita Karana* or "three causes of happiness". Specifically it is the human relationship with God (*parhyangan*), the human relationship with fellow human beings (*pawongan*), and the human relationship with the natural environment (*palemahan*). For the Balinese community, only when there is a balance in life can one achieve happiness and prosperity.

## Energy narrative that is in favour of preserving nature and creating a sustainable life drives energy transition development in Bali

From a cultural sociological perspective, narratives are an arena of meaning-making.<sup>xxi xxii</sup> It is assumed that such arenas can have a strong influence on transition pathways: "Narrative is an arena [...] in which individuals connect to the public and social world, in which change therefore becomes possible."<sup>xxiii</sup>

Author(s)	Quote on the social role of narratives
Hards 2012: 762	Narrative approaches suggest that people make sense of their experiences by telling stories to others and to themselves. Advocates claim that storytelling is a universal human activity. <sup>xxiv</sup>
Bonnell & Hunt, 1999a: 17	Narrative is an arena in which meaning takes form, in which individuals connect to the public and social world, and in which change therefore becomes possible. <sup>xxv</sup>
Smith 2010: 129	Actors articulate their beliefs and thoughts and conceive of appropriate actions to accompany those thoughts [...] by the telling of a story with a beginning, middle, and end. Through these expressions, actors come to understand and construct their world and their place within it. <sup>xxvi</sup>
Elliott 2005: 3	A narrative can be understood to organize a sequence of events into a whole so that the significance of each event can be understood through its relation to that whole. This way, a narrative conveys the meaning of events. <sup>xxvii</sup>
Dahlstrom 2010: 857	Narratives influence what individuals believe about the world. <sup>xxviii</sup>

**Table 2**  
The social role of narrative

Visions and expectations formulated by niche actors that call for energy transition need to resonate with what is called the meta-narrative<sup>3</sup> to be able to bring transformation. The local wisdom of *Sat Kerthi* and *Tri Hita Karana* may be considered as the existing meta-narrative in Bali. With this meta-narrative, a narrative of energy transition that is in favour of preserving nature, and creating a sustainable life can easily be accepted by the local community. This allows the government's development vision of *Nangun Sat Kerthi* and *Bali Kerthi Ekonomi* to thrive in the community and eventually drive systemic and behavioural change, because they resonate with the existing meta-narratives.

Bali is in a strong position on the trajectories of transition pathways to renewable energy, because the narrative of putting nature forward for human prosperity is part of the community's belief, so the energy transition narrative is validated by the meta-narrative. The social function of narratives also serves as guiding principles, influencing visions, developments and practices on different levels of society.<sup>xxix</sup> Concerning the energy transition, a set of policies in line with the meta-narrative and energy transition narrative have been implemented by the Balinese government to facilitate systemic change:

- 1 Governor of Bali Regulation No. 45/2019 on Bali Clean Energy
- 2 Governor of Bali Regulation No. 48/2019 on Electric Vehicles
- 3 Bali Provincial Regulation No. 9/2020 on Bali Province Regional Energy General Plan (RUED) 2020-2050
- 4 Governor of Bali Decree on the general plan for electricity for the province of Bali from 2020 - 2039
- 5 Governor of Bali Circular Letter No.5/2022 on rooftop PV development

<sup>3</sup> Meta-narrative or grand narrative is a term developed by Jean François Lyotard to mean a theory that tries to give a totalizing, comprehensive account to various historical events, experiences, and social, cultural phenomena based upon the appeal to universal truth or universal values. In this context, the narrative is a story that functions to legitimize power, authority, and social customs. 15

These regulations support the pooling of societies' strengths to work toward energy transition goals by socially legitimising the energy transition narrative, and by seeking to achieve and prove the value of their identity. Various actors, including tourism stakeholders, architects, artists, CSOs, and cooperatives have collaborated to take action toward energy transition as part of their role and responsibility to protect the environment. This insight is derived from the narratives found during CASE activities in Bali, particularly the CASE Dialogue with CSO and the Public in Bali on Energy Transition that was held in early August 2022. The narrative of energy transition that emerged amongst the participants revolved around their stance on the importance of protecting the environment.

Rooftop PV installation is at the moment one of the most circulated energy transition narratives in Bali. It has received positive responses from the community. Architects and tourism stakeholders collaborated to promote green tourism, and today Bali has a number of hotels, hostels and villas that are using rooftop PV as a source of energy.

Artists in Bali are actively promoting solar energy through their works, from performance art to fine art. One of the well-known Bali-based musical group Navicula is actively advocating for the environment. Its latest song, entitled "*Dinasti Matahari*," talks about renewable energy, particularly solar energy. There is also Arka-Kinari, a floating cultural platform launched by the artists Filastine & Nova. It is a seventy-ton solar-powered sailing ship, which actively promotes climate change resilience. A number of murals of solar panels, hydropower, and electric vehicles by Bali's graffiti artists can be found across Bali, as part of a wider campaign on sustainable tourism and Bali's green recovery. Cooperatives that provide solar panel credit services are also available in Bali, such as Koperasi Amoghasiddhi. In the private sector, the Mall Bali Galeria, the largest on the island, has installed a 1.5MWp solar PV rooftop system.

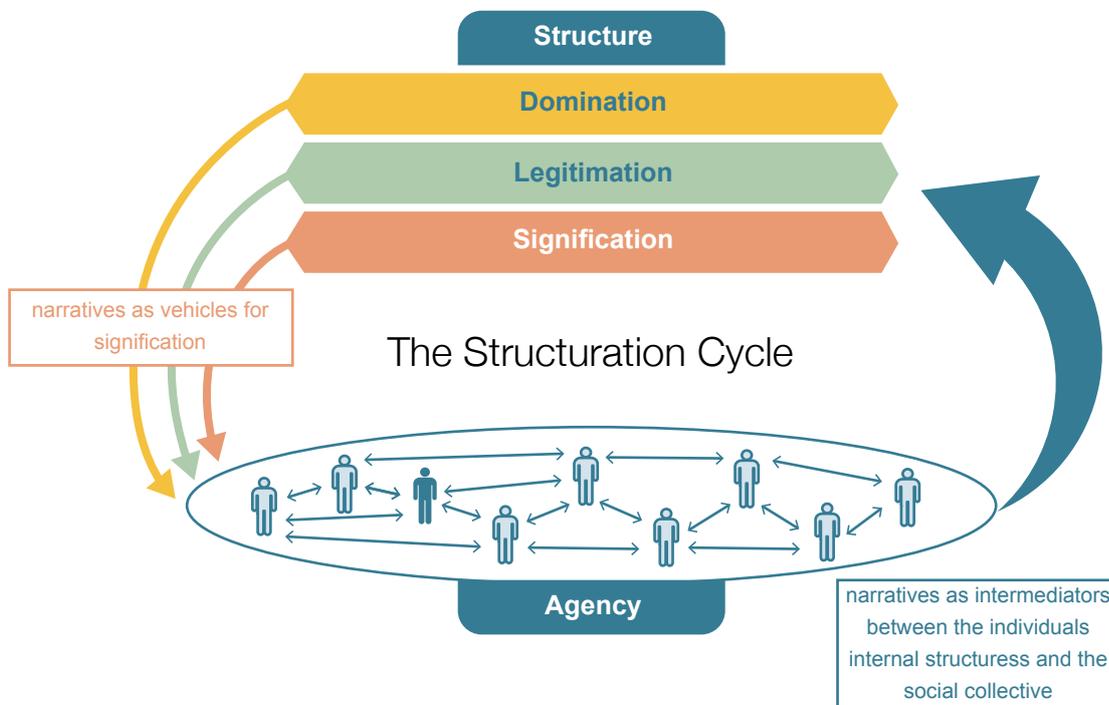
No.	Location	Capacity (MW)	Notes
1	a. Kayubih, Bangli Regency	1	
	b. Kubu, Karangasem Regency	1	
2	Bali Galeria Mall	1.5	
3	Perusda Bali	0.0066	Used for fast charging
4	Across 9 regencies	3.4	PLN on- grid rooftop PV
5	Klungkung, Karangasem, and Bangli Regency	0.16	
6	PT. Tirta Investama (AQUA Mambal), Badung	0.47	
7	PT. Toyota Astra Motor and petrol stations across Bali	0.54	
<b>Total</b>		<b>95.666</b>	

**Table 3**  
Bali's solar power plant status

Source: Governor of Bali, 2022<sup>xxx</sup>

## Energy transition narrative to support a just and inclusive energy transition development

At the local level, narrative is effective in building perceptions and social movements. It is important that the narrative be understood and accepted by the community, as previously shown above. However, Bali has not yet been able to fully utilise its solar potential despite supportive energy transition narratives, particularly due to PLN's limited 10% to 15% of installed rooftop PV capacity. This underscores the importance of a multi-level approach in the energy transition process. To better understand the relationship between policies and rules, narrative, behaviour (agency), and energy transition, it is necessary to regard the structuration cycle.



**Table 3**  
Illustration of the role of narratives in the structuration cycle

Source: Hermwille, 2016)<sup>xxxii</sup>

Behaviour (agency) in social movements is co-determined by the existing structure of the society.<sup>xxxii</sup> According to Giddens, rules and policies are part of the structure of legitimation and signification.<sup>xxxiii</sup> All three concepts – domination, legitimation, and signification - will affect the community's agency.

On the one hand, narratives can provide signification, and their role is not restricted to only this. Structures of legitimation frequently build on signification. This implies that the narrative of a policy must provide meaningful explanations and if not, legitimation will erode.<sup>xxxiv</sup> On the

other hand, a set of rules or policies, such as PLN's limitation on rooftop PV installed capacity, could eventually hinder the community's agency despite support for the energy transition that has been built through the signification process.

Therefore, in addition to the availability of renewable energy technologies and resources, the transformation of the energy system requires visionary national and sub-national government action, as well as empowered citizens. Achieving a just and inclusive energy transition must consider a human-centred approach. Meaning, energy transition must aim for greater social justice, economic equality and a better quality of life for all.

From the point of view of policy making and implementation, the process of energy transition can be classified into two approaches: the top-down and the bottom-up transition process. Proposals by international organisations or at the national level are considered as the top-down transition process.<sup>xxxv</sup> Conversely, the bottom-up transition process is defined as arising from the territories. It seeks to link the energy transition system based on local development.<sup>xxxvi</sup> Hence, integrating local wisdom and cultural value in the energy transition narrative will support the bottom-up process because it allows the community to have a sense of belonging to the narrative and ensuring a just and inclusive energy transition.

What we have learned from Bali is that the narrative of the energy transition is driven to achieve prosperity for the community in accordance with the community's socio-cultural landscape. This includes promoting sustainable economic development, whilst living in harmony with nature. In addition to integrating local context into the energy transition narrative, community ownership in energy transition can be achieved through driving sustained and inclusive public dialogue in setting energy transition core objectives and strategies.

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## About CASE

The programme “Clean, Affordable and Secure Energy for Southeast Asia” (CASE) is a regional project focuses on the four largest countries of the region in terms of population: Indonesia, Vietnam, Thailand, and the Philippines. CASE is implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH and international and local expert organisations in the area of sustainable energy transformation and climate change: Agora Energiewende and NewClimate Institute (regional level), the Institute for Essential Services Reform (IESR) in Indonesia, the Institute for Climate and Sustainable Cities (ICSC) in the Philippines, the Energy Research Institute (ERI) and Thailand Development Research Institute (TDRI) in Thailand, and Vietnam Initiative for Energy Transition (VIET) in Vietnam. The four countries represent nearly three-quarters of total power generation in Southeast Asia, and account for about 72% of the region’s GDP and for 82% of its population. The energy development of these countries will therefore have a major impact on the ability of the region to meet both development and sustainability goals as well as globally to meet the goal of the Paris Agreement.

Funded by the German Federal Ministry for Economic Affairs and Climate Action (BMWK), CASE aims to support a narrative change in the region’s power sector towards an evidence-based energy transition, in the pursuit of the Paris Agreement goals. The programme makes use of available research initiatives while generating new evidence grounded in local realities that can influence economic managers, power sector decision makers, industry leaders and electricity consumers to support early, speedy, and responsive strategic reforms in the power sector. To reach this objective, the programme applies a joint fact-finding approach involving expert analysis and dialogue to work towards consensus by converging areas of disagreement.

In Indonesia, CASE is working closely with the Ministry of National Development Planning / National Development Planning Agency (Kementerian PPN/Bappenas) – Directorate General of Energy, Telecommunications, and Informatics (KTI) as the political partner.

Furthermore, CASE is an aligned programme of the Energy Transition Partnership (ETP), an alliance of international donors, philanthropies, and partner governments established to accelerate energy transition and to support sustainable development goals in Southeast Asia.

## About GIZ

The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH is owned by the German government and has operations around the globe. GIZ provides services in the field of international cooperation for sustainable development. GIZ also works on behalf of other public and private sector clients both in Germany and overseas. These include the governments of other countries, the European Commission, the United Nations, and other donor organisations. GIZ operates in more than 120 countries and employs approximately 22,000 staff worldwide.

## About IESR

Institute for Essential Services Reform (IESR) is a think-tank in the field of energy and environment, IESR encourages transformation into a low carbon energy system by advocating a public policy that rests on data-driven and scientific studies, conducting capacity development assistance, and establishing strategic partnerships with non-governmental actors.

## About Bappenas

The Directorate of Electricity, Telecommunications and Informatics under the Ministry of National Development Planning (Bappenas) has the task of coordinating, formulating and implementing policies, as well as monitoring, evaluating, and controlling national development plans in the fields of electricity, telecommunications, and informatics. The Directorate is CASE Political Partner in Indonesia.



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