

# Beyond electrification for development: Solar home systems and social reproduction in rural Solomon Islands

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**Abstract:** *Based on an in-depth examination of the acquisition, use, maintenance and deterioration of solar home systems in a village in Malaita, Solomon Islands, this article challenges the analytical focus of current debates on electrification in Pacific Island countries – why Pacific Island countries have not yet sufficiently electrified to achieve their development goals. Alternatively it examines what is, how, in this case, rural Solomon Islanders have integrated already available electricity into their daily lives. This perspectival shift highlights how rural Solomon Islanders have developed an energy identity that corresponds to their needs, interests and values, rather than those of national and international actors. It re-emphasises the struggles of national and international electrification initiatives in rural environments, linking them to a broader distrust in the motivations of external actors. At the same time, it reveals how, throughout their life cycle, rural solar home systems have become integrated into processes of social reproduction rather than development aspirations. Contrary to dominant debates, rural solar home systems matter most in the opportunities that they provide for reciprocal exchange than for what the electricity enables them to do.*

**Keywords:** *development, electrification, social reproduction, solar home systems, Solomon Islands*

## Introduction

Alongside neighbouring Papua New Guinea and Vanuatu, Solomon Islands is one of the least electrified countries in the world (Dornan, 2014; Lucas *et al.*, 2017; Weir, 2018). The 2019 Pacific Energy Update from the Asian Development Bank suggests that a mere 23% of Solomon Islanders have access to *some* electricity. Outside its capital, Honiara, only about 6% of the country is connected to an electrical grid, which means that no more than a quarter of the population can, at least theoretically, use the potentially ‘unlimited’ supply of grid-based electricity systems (World Bank, 2018a). However, even when Solomon Islanders live in proximity to a grid, high pay-per-use costs prevent regular access. Because of dependency on industrial diesel-fuelled power generators, the need to import diesel from third countries and high average distribution grid losses, the cost of grid-based electricity in Solomon Islands

is among the highest globally and double the average of other Pacific Island countries (PICs) (World Bank, 2018a; Tina River Hydro, 2020). Simultaneously, about one-quarter of Solomon Islanders live below the international poverty line of US\$1.90 per day and two-thirds live on less than US\$3.10 (World Bank, 2018b), with the poverty line being highest in grid-serviced Honiara. There, the costs of basic needs are about double those of rural areas and even members of the urban middle class, such as teachers or government employees, struggle to regularly afford pay-per-use infrastructural systems (Solomon Islands National Statistics Office, 2015; UN Habitat, 2012).

While urbanites struggle with high costs of living, rural Solomon Islanders meet most basic needs through self-provisioning activities, gardening, fishing and the construction of houses from locally grown materials. However, rural access to the cash income needed to purchase foreign goods, including off-grid electricity systems, is

limited to small-scale and irregular market activities as well as (temporary) labour migration. Accordingly, affordability is also a major challenge to electrification in rural areas. Without grid access, rural electricity users depend on their ability to purchase, in particular, personal petrol generators and, more recently and increasingly, solar home systems (SHS) (SIG, 2014). Generators tend to have comparatively low initial purchase costs but require users to invest in petrol which can easily cost over four times as much as in Honiara or may not be available at all. SHS have no running costs but even the small systems common in rural areas – panels of 20 W or less combined with a 12 V, 4.5 or 7 Amp-hours battery that often allow for powering around one to three lights for some of the night and to (partially) charge one to two mobile phones – require substantial initial investments (Dornan, 2014).

In this context, the seventh Sustainable Development Goal, SDG7: Affordable and Clean Energy, and its promise that ‘a well-established energy system supports all sectors: from businesses, medicine and education to agriculture, infrastructure, communications and high-technology’ (UN, 2020:1), has become a priority of Solomon Islands Government (SIG) and its international development partners (e.g. see World Bank, 2018a; ADB, 2019; Tina River Hydro, 2020). For example, the Tina River Hydropower Project, which aims to provide nearly 70% of Honiara’s electricity by 2025, is regularly prioritised in SIG decision-making (e.g. see SIBC, 2017). Additionally, donors such as New Zealand have made renewable energy one of their main investment and assistance areas for the Pacific (Cole and Banks, 2017). National and international development initiatives emphasise that electrification can provide new opportunities for integration into the formal economy. Specifically, they suggest that it may decrease Solomon Islands dependency on unsustainable drivers of its economy such as logging (e.g. see SIG, 2014; World Bank, 2018a; ADB, 2019; World Fish, 2019). Electrification is also said to provide the technological foundation for more reliable state services such as the many healthcare facilities that are operating without any or reliable electricity (SIG, 2014; World Bank, 2018a); and may even transform Solomon Islands society more broadly,

among others, by increasing gender equality (World Bank, 2018a; World Fish, 2019). Finally, while renewable energy programmes may not free Solomon Islands from dependency on foreign donors (Cole and Banks, 2017), they promise to untangle PICs from volatile oil prices while reducing greenhouse gas emissions (Weir, 2018; Tina River Hydro, 2020).

Despite this proclaimed significance of electrification for Solomon Islands (and other PICs), there are only few in-depth qualitative studies that go beyond regional overviews and even less that prioritise Pacific Islanders’ perspectives. With a focus on policymakers and donors, current research largely emphasises the development potentials of renewable energy in the region while exploring core challenges for implementing renewable energy initiatives (e.g. see Sovacool *et al.*, 2011; Singh, 2012; Betzold, 2016; Lucas *et al.*, 2017; Michalena and Hills, 2018; Weir, 2018). Hence, these studies primarily seek to identify ways for policymakers and donors to increase renewable energy penetration for how they envision development should look like across PICs. From these perspectives, renewable energy projects require (i) better policy and regulatory frameworks, (ii) more and better private-public partnerships, (iii) capacity-building to improve maintenance skills, especially for off-grid systems and (iv) more socio-culturally aware renewable energy initiatives since PICs are ‘yet to attain an energy identity which reflects their own needs and self-governing status’ (Michalena and Hills, 2018:350).

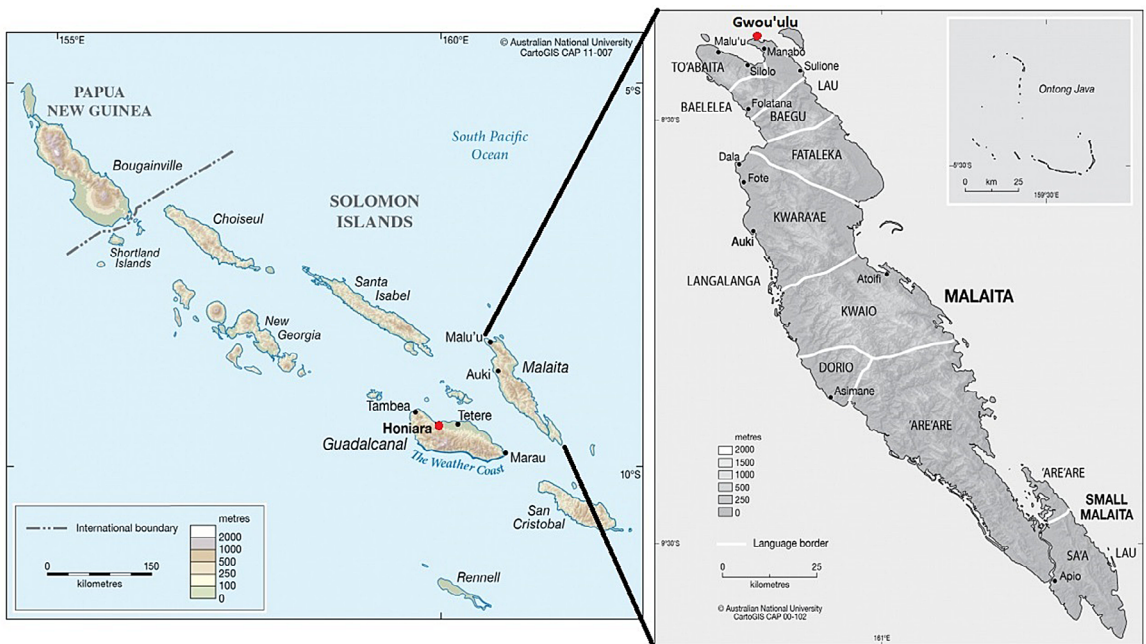
This article contends that these priority areas have created a significant blind spot in understandings of Pacific Islanders’ experiences with electrification: we know little about how electricity is already present and actually used in Pacific Islanders’ lives.<sup>1</sup> By arguing that policymakers and donors need to intervene to provide more electricity to realise regional development goals, Pacific debates on electrification prioritise what is not yet, what is lacking and what barriers contribute to this lack with a sole focus on the perceived benefits of electrification for development. This article suggests that an analytical shift towards what is, how Pacific Islanders have already integrated electricity into their daily lives, opens up a new way for engaging especially with the socio-cultural dynamics of electrification including maintenance capacities

and interests. It proposes that PICs already have unique ‘energy identities’ but that these identities may not necessarily be about external visions for development and that what current debates largely identify as ‘socio-cultural impediments’ may, in fact, reflect the needs, interests and values of Pacific electricity users.

This article uses an ethnographic approach to uncover these actual, daily usages of electricity in the particular context of rural Solomon Islands (Fig. 1). Data were collected over 12 months of multi-sited anthropological fieldwork among the Lau speakers of Malaita Province as part of a larger research project on the visibility of the Solomon Islands state among rural and urban non-elites from February 2014 to February 2015<sup>2</sup> and a one-month visit in 2018. Largely together with my life and research partner, Geoffrey,<sup>3</sup> I lived for eight months in the rural Lau Lagoon and five months in Lau settlements and primarily with Lau host families in and around Honiara. We also travelled frequently in between, often accompanying (temporary) migratory labourers and a multitude of foreign and local goods such as SHS. As part of this ethnographic approach, I participated in, and observed, everyday routines,

from working in gardens to learning how to weave mats and conducted a survey of, and engaged in frequent conversations with Lau speakers about past, present and possible future ‘development’ infrastructures in their lives. This allowed for generating an understanding of how development infrastructures such as SHS have been integrated into everyday lifeworlds according to my interlocutors’ needs, interests and values.<sup>4</sup>

In the following, I detail my findings through an in-depth analysis of the everyday dynamics that surround usages of SHS as the most feasible renewable off-grid solution to rural electrification (see Dornan, 2014) in Gwou’ulu Village, my primary fieldsite in the Lau Lagoon. I show how villagers’ decision-making surrounding SHS is situated within particular socio-cultural, environmental, political and broader infrastructural contexts that shape the whole life cycle of SHS. Accordingly, this article first considers how villagers obtained their SHS. Then, it discusses villagers’ struggles with keeping their SHS alive and finally, how the electricity that Gwou’ulu SHS generate is consumed in everyday life. This reveals how SHS, in their acquisition, maintenance, use and disposal primarily aid processes of social reproduction. SHS are



**Figure 1.** Maps of Solomon Islands and Malaita, obtained from CartoGIS, College of Asia and the Pacific, the Australian National University, under a Creative Commons licence. Modified to highlight Honiara and add Gwou’ulu village to Malaita [Colour figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)]

barely considered as tools for economic development as envisioned by SIG and its international development partners, in particular, because they matter more in the opportunities for exchange that they provide than what electricity enables them to do.

### Acquiring SHS

In 2014, comparable to other villages in the northern Lau Lagoon, approximately 85% of Gwou'ulu houses were equipped with their own SHS. The vast majority of these SHS consisted of simple 5 W panels connected to 12 V, 4.5 or 7 Amp-hours batteries without a charge controller or inverter. There were a few larger system components available in the village as well. They included 10 and occasional 20 W panels as well as 12 V, 12 Amp-hours batteries. Six households further owned SHS that included each one 120 W panel, one 24 Amp-hours battery, and a combined charge controller-inverter with standard Australian power sockets and USB ports. In the following, I briefly outline how these SHS arrived in Gwou'ulu with a focus on the three most dominant itineraries,<sup>5</sup> their successes and failures.

#### *SHS as electoral gifts*

Villagers largely agreed that the 2010 National Election had ushered in the era of solar-based electrification in Gwou'ulu. In 2010, similar to the 2014 election that I observed, candidates promised to expand grid infrastructures. However, many of my interlocutors thought it unlikely that such substantial and constituency-wide infrastructural promises would be realised. Instead, both in 2010 and 2014, they wanted to find out what infrastructural resources a candidate had to offer to them now, or should the candidate win, immediately after the election through their Constituency Development Fund, discretionary funds available to individual Members of Parliament (MPs) for projects within their constituencies. Particularly desired were infrastructures that would allow villagers to preserve, or expand, individual households' electric and kinetic energy supplies: SHS, water tanks and fibre-glass canoes.

In 2010, several residents succeeded. They received some of the 5 W panels that I recorded

four years later, as well as panels and batteries that had since broken down. Reflecting broader patterns of patron-client relationships in Solomon Islands electoral process (see, e.g. Cox, 2009; Hobbis and Hobbis, 2017), my respondents explained that these 'lucky' villagers had endorsed the 'right' candidates, those that kept their promises to particularly faithful supporters and often irrespective of electoral results. These 'lucky' villagers had also 'earned' their individualised infrastructures, for example, by serving as intermediaries between the candidate and not-as-committed potential voters, usually village chiefs, teachers and priests.

In 2014, none of Gwou'ulu villagers was 'lucky' enough. No new SHS or other individualised infrastructures arrived in the village. Disappointed, my interlocutors explained that they would have to wait for the next election. They did not expect any substantial infrastructural improvements in the village until then, at least not because of the help of their MP or SIG more broadly. The winning candidate had no significant connections to Gwou'ulu. He had no close relatives in the village and he had barely received any votes from Gwou'ulu in 2014, and was thus deemed unlikely to use his Constituency Development Funds for the benefit of Gwou'ulu villagers.

Accordingly, while a World Bank (2018a) report suggests that 'MPs... remain a key source of electricity infrastructure for households' (p. 39), Gwou'ulu villagers' experiences suggest that this is only true if the 'right' MP or even candidate meets the 'right' village. This had been the case in 2010 when the national political process did bring some electrification to Gwou'ulu, but not in 2014 and also not in between the electoral cycles. In addition, none of my respondents could think of any other national government-sponsored way of obtaining individualised infrastructures such as SHS instead, echoing the observations of Sovacool *et al.* (2011) in neighbouring Papua New Guinea, they had no confidence in the capacity, or interest of, their national institutions for providing any of their energy needs.

#### *SHS from international donors*

In 2012, a second significant opportunity for obtaining SHS arose, sponsored by JICA (Japan International Cooperation Agency). JICA offered

North Malaitan villages the possibility of acquiring a comparatively substantial SHS – the 120 W panel system summarised earlier. My interlocutors described the JICA system with considerable praise. They liked that its ability to generate electricity far outstripped that of other systems available in Gwou'ulu. They further appreciated that JICA delivered the systems directly to Gwou'ulu and installed the panels on a wooden post for maximum sun exposure. JICA also trained, and by 2014 still regularly paid, a technician from the area who checked the SHS on a bi-monthly basis.

Unfortunately, there were two significant hurdles associated with this programme. First, every participating household had to contribute around SBD2000 per system. Most could not afford this easily. A handful of residents have comparatively stable incomes, such as school teachers and the village priest – the same who are also most likely to sway politicians that they are worthy of their infrastructural gifts – and they could use this income as a starting budget. Less privileged households in the power hierarchy of the village had to mobilise their remittance networks – relatives with more stable incomes, usually based in Honiara – to even consider applying for the JICA SHS.

Since the system was so appealing and the price tag so (comparatively) low – the set was cheaper than, for example, a 40 W panel system that could be purchased in Honiara without transport, installation or maintenance – several non-elite households asked, and received promises for financial support from urban relatives. However, JICA also required interested households to fill out forms if they wanted to participate. By 2014, no one had a copy of these forms, but my interlocutors described them as lengthy, confusing and possibly untrustworthy. The forms were said to be a kind of contract between participating households and JICA. Those who signed them basically took out a loan, ensuring JICA that they would be able to pay the associated fees within a particular time frame.

Villagers were highly sceptical of signing any documents or 'black and whites' as they are commonly referred to. 'Black and whites' had been used against them and other rural communities in Solomon Islands in the past, regularly as veiled attempts to alienate them from their

natural resources (see Wairiu and Nanau, 2011). Villagers are often also not sufficiently literate to read such documents in depth, and if necessary, to contest their contents. Considering the stakes and the existence of perpetual land disputes as a primary source of conflict across Solomon Islands (see Wairiu and Nanau, 2011), many of my interlocutors did not sufficiently trust other villagers to tell them the truth about these forms and the commitments that they entailed. Hence, few felt confident enough in JICA's motives, or those of any other national and foreign development organisation for that matter.

Because of these risks only six households participated in the programme. Members of these households had spent considerable amounts of time in urban environments and had, during these times, acquired sufficient skills as 'form fillers.' These skills allowed them to feel confident that the JICA project was not a trick to access their lands. Except one household, all project participants consisted of village elites, the same ones who had succeeded in obtaining SHS as electoral gifts. Hence, the arrival of these SHS furthered the visibility of solar electricity in Gwou'ulu, but failed to effectively contribute to the electrification of the village at large.

Gwou'ulu experiences, thus, provide further support for claims that community acceptance of foreign donor initiatives can be low (e.g. see Sovacool *et al.*, 2011; Lucas *et al.*, 2017). However, Gwou'ulu villagers' reasons for rejecting JICA are quite different than those otherwise identified in the literature, highlighting the importance of additional context-specific, qualitative analyses. While Sovacool *et al.*'s (2011) PNG-based respondents suggested that they did not engage with donor projects because 'we really do not know how to use them and are afraid to ask how out of fear for looking stupid or backward' (p. 1537), Gwou'ulu villagers at no point indicated a lack of confidence in their understanding of SHS. Instead, they expressed a broader distrust in the motivations of foreign actors and their motivations for 'helping' Gwou'ulu. This distrust is unlikely to be addressed by a more robust focus on technological capacity-building, as, for example, Betzold (2016) suggests. Instead, Gwou'ulu villagers' concerns indicate a broader and more

complex structural problem linked to ongoing failures of 'Western' development practices in the Pacific (e.g. see Gegeo and Watson-Gegeo, 2002).

### *SHS as remittance*

Considering that much existing research on SHS in the Pacific contends that, if off-grid electrification is to occur, it will be a result of government or donor programmes due to a local 'lack of access to credit' (Michalena and Hills, 2018:335; see also Betzold, 2016; Dornan, 2014), how did nearly 85% of households end up with SHS by 2014? The answer is as simple as it is profound: As was also the case with the JICA SHS, Gwou'ulu villagers commonly seek, and often receive, financial help from family members with access to the cash economy. With no major economic development project, from plantations to planned, but never realised, canneries, ever having succeeded sustainably on Malaita (Moore, 2007; Hobbis, 2016), villagers have continuously had to rely on support from temporary or more permanent migration to access cash and cash-dependent foreign goods; and similar to rural settlements across Melanesia (see, e.g. Dalsgaard, 2013; Hobbis, 2017; Hobbis and Hobbis, 2020; McDougall, 2017; Petrou, 2018), remittances are an integral part of Gwou'ulu lifeworlds.

Temporary migrants are often tasked with finding work specifically to realise particular goals such as earning enough money to cover a year's worth of school fees or the costs for individualised infrastructures. Most important here, contrary to Dornan's (2014) argumentation that upfront costs associated with SHS are unaffordable for rural households, villagers consider SHS relatively straightforward to obtain through their remittance networks. First, SHS are comparatively small and, therefore, easier and cheaper to transport from Honiara to Gwou'ulu than, for example, water tanks. Second, SHS can be bought in parts, as individual panels, batteries, lamps, cables and converters, and, thus, do not necessitate a substantial one-time investment. SHS can be assembled over multiple periods of temporary migration, or costs can be divided among multiple sources of remittances.

This said, there are hurdles to obtaining SHS through remittances. Often migratory labourers' hopes for saving enough money to realise big projects such as SHS fail because of more immediate remittance needs such as health care costs. Besides, migratory labourers and more permanent urbanites can often barely make ends meet themselves or they waste cash on beer or gambling (see also Sovacool *et al.*, 2011). In this context, strategies to avoid remittances abound. For example, some urbanites do not pick up calls from village-based kin to delay giving (see also Dalsgaard, 2013; Hobbis, 2017). Also 'pre-emptive' giving is widespread. Urban residents send gifts that have not been directly requested to show good faith while maintaining control over what they send when (see also Dalsgaard, 2013; Hobbis, 2017); or they 'downgrade' what they have been asked for, giving, for instance, a 5-W panel rather than a 10-W or 20-W one.

What is, however, rarely done is stopping giving altogether, even among second or even later generation urbanites (see also Petrou, 2018). Not to regularly give is tantamount to dissolving both one's connection with kin networks and with one's ancestral home as a source of belonging, to metaphorically 'lose the passports' (McDougall, 2017) that migrants require to return home. As Dalsgaard (2013) notes, in Melanesia remittances 'generate social inclusion or exclusion and are tied into the strategic maintenance or severing of bonds between kin separated by large distances' (p. 281). Few urbanites dare to take the route of social exclusion, especially the more temporary migrants who often maintain houses in Gwou'ulu and who may even have left nuclear family members (husbands, wives and/or children) behind. Hence, even when requesting items with significant price tags such as SHS, villagers often enough succeed eventually.

Gwou'ulu villagers, thus, expressed confidence that their relatives are, and would remain for the foreseeable future, the most reliable and likely way to obtain access to SHS. In other words, exchange relationships rather than development initiatives have and continue to give birth to the electrification of village life, beyond and irrespective of particular households' political capital or form-filling abilities. As I show in the following, the perpetual flow

of remittances rather than the national and international actors is particularly crucial for rural electrification considering the many ways in which the functionality of SHS are threatened.

### Dysfunctional SHS

Without exception, Gwou'ulu SHS are manufactured outside of Solomon Islands, mostly in China. When they make it to the main port in Honiara, these systems already have a substantial journey behind them and, as my interlocutors were quick to tell me, many will arrive defunct or with major manufacturing flaws. The problem, they suggested, is that Solomon Islands port authorities do not sufficiently check the quality of incoming goods. Defunct products regularly end up at one of the near-ubiquitous 'Chinese shops' owned and operated by the local community of East and Southeast Asians (see Moore, 2008). At most of these shops, customers can usually not or only very briefly test SHS for their functionality. If they turn out to be dysfunctional after purchase, there are few opportunities to request a refund or replacement. Most stores promise a one-week warranty. However, stories about warranties not being upheld abound. Disputes between customers and shopkeepers about malfunctioning electronics are a common site on Honiara streets.

For example, out for a shopping trip of my own, I noticed a large crowd forming around one of the Chinese shops specialised in electronic goods. Tom [pseudonym] pulled me aside. According to Tom, a fight had broken out between a customer and the storekeeper. The storekeeper had refused to refund the costs for a solar battery. Eagerly supported by others who had noticed our conversation, Tom assured me that the customer had produced the receipt, that the customer had only bought the battery yesterday and that, after a quick test at home, the customer had realised that it was defunct. However, the storekeeper claimed that the customer had damaged the battery through improper use and was, thus, solely responsible for the essentially wasted investment. Just as Tom finished his explanations, the yelling emanating from inside the store got louder, accompanied by

what sounded like goods being thrown to the ground, perhaps by cabinets being torn apart. The crowd started to move as the storekeeper chased the customer onto the street. A passenger in a passing bus yelled, 'burn the store down, burn it down.'<sup>6</sup> Some in the crowd picked up the chants. Concerned, Tom shushed me away. When I returned an hour later, the police had arrived, the crowd had dissolved, the store was still standing. The customer had been arrested. The problem with the defunct solar battery remained unresolved.

Over the next days, I heard these events being retold many times. Everyone I talked to agreed: The customer's actions had been justified. Far too often had they, or others that they knew, bought malfunctioning electronics from Chinese stores. This had wasted considerable amounts of their hard earned cash to the detriment of their rural relatives and to the detriment to their own relationships with these relatives – after all they had not been able to fulfil their remittance requests. However, echoing Sovacool *et al.*'s (2011) observations that high quality SHS products are difficult to find, my interlocutors explained that alternatives are slim at best. Other retailers are simply too expensive, especially so since even functioning SHS could quite easily become dysfunctional from their onward journey to rural environments.

### Treacherous environments

Once purchased, and ideally checked for functionality, most urban customers take their newly acquired SHS or one of their components (back) to the harbour. There it is loaded onto a ferry to their home provinces. People and their cargo fill these vessels to the brim. Rarely built for open-ocean crossings, and with only limited covered areas and regular rough seas, passengers and most of the cargo are habitually drenched in rain and the occasional wave of eventually corrosive sea water. If available, a plastic tarp is thrown over the cargo, but this is not always enough. Once unloaded, water sensitive items such as the solar batteries and regulators are regularly found to have 'died' during the crossing.

If SHS (components) survive, they already face their next challenge, in this case, the onwards journey. They are jostled, overhead,



through the dense crowd that is waiting, in the case of Gwou'ulu, at the dock in Auki, Malaita's Provincial capital, and onto flatbed pick-up trucks. Many of these trucks are again bursting out of their seams. Precious cargo such as SHS are layered with bags of rice on the bottom, the panel unit on top surrounded by empty plastic bottles to act as a cushion. Still, this does not guarantee survival as the road itself is habitually in a rough condition (see Hobbis, 2019). At multiple locations the road just disappears into long stretches of water, mud or dried ruts up to a metre deep. Storms lead to flash floods which carve new cliff faces into the road, bridged by palm tree trunks lashed together set wheel width apart. Goods on the trucks and the trucks themselves break regularly.

Once in Gwou'ulu, the lives of SHS do not become substantially easier. Especially the battery component is sooner or later unusable or, if affordable, replaced. In Gwou'ulu most houses are made out of folded and woven pandanus leaf. They leak habitually, especially during storms. Leaks can usually be fixed quickly, still, one single encounter with a rain storm may already be enough to permanently damage SHS batteries (or any of the electronics that they are charging). My interlocutors position their batteries in the most reliably dry areas of their houses, but there is always a degree of luck involved. Besides, they are never able to hide their SHS from the general humidity that absorbs all aspects of village life. Over time, this humidity leads to material decay of various expressions such as rust and eventually may prove fatal.

A perhaps even bigger problem for solar batteries is the scarcity of charge controllers. Charge controllers prevent batteries from being overcharged or drained entirely, with both having the potential of permanently damaging the battery. However, again contrary to in the literature dominant claims that rural Pacific Islanders are lacking the necessary understanding for maintaining their SHS (e.g. see Sovacool *et al.*, 2011; Betzold, 2016; Lucas *et al.*, 2017), villagers have developed various techniques to maintain the functionality of their SHS. For example, they charge something like a phone while the battery is attached to their solar panel, the goal being to drain the battery as it is being filled. Since barely any device charges faster

than the battery is loaded, this does not guarantee overcharge protection, but it provides at least a counter balance. Another strategy is to connect the battery only for a few hours a day even if it means that energy needs are likely not going to be met, especially also for lights in evenings.

### *Unsecure belongings*

A concern that largely affects solar panels is theft or other types of 'removal.' Located at a thoroughfare to North Malaita's main road, flatbed trucks roll into the village on a nearly daily basis after moments of road repairs – usually, from this perspective, 'luckily' only a few months every year. As I argue elsewhere (Hobbis, 2019), villagers consider the unpredictable movements of strangers to and through Gwou'ulu on these trucks as a source of immoral behaviours. Whenever the road is well-enough maintained, villagers lock their house doors – something that is otherwise never done – and hide relatively easily removable items such as their solar panels. While this usually ensures that the panels are not stolen, it also means that they cannot be used at this time. Only when a household member remains at home, meaning they do not complete necessary daily subsistence tasks, SHS can be used without significant worries whenever the road is functional, again reducing the times that SHS can actually generate electricity.

Some SHS are also in danger of 'theft' by the politicians gifting them in the first place. During the 2014 election, several villagers were concerned that they would have to return the SHS that they had received as known supporters of the incumbent MP if he did not win another term. This had, so I was told repeatedly, happened to voters in a neighbouring constituency when supporters of a former, disgruntled MP destroyed the water pipes that had been installed during his tenure. The concern was not unwarranted. When the incumbent lost, some of his supporters forcefully removed some of the SHS that the former MP had distributed. The former MP himself ordered his supporters to return the SHS, explaining that the SHS had been given out through his CDF, as part of state programmes. They were not 'his' SHS and no one was required to return them. Still, villagers'



worries and the temporary removal of some of their SHS indicate the extent to which my respondents distrust national as well as international actors – villagers who rejected the JICA project in parts also did so because they assumed JICA may easily remove the systems again if they fell behind with their payments.

In Gwou'ulu SHS regularly lose their functionality and villagers generally expect and accept that their SHS break down. Nonetheless, and contrary to Weir's (2018) argumentation that rural Pacific Islanders only inadequately maintain their systems and 'tend to simply abandon it and go back to the older "alternatives"' (p. 765; see also Dornan, 2014), Gwou'ulu villagers have developed various strategies to keep their SHS alive, even if these strategies may not correspond to the maintenance standards of policymakers (see also Cross, 2016). This is the case, as I show in the following, because of the tremendous potential for social reproduction that villagers ascribe to SHS and the electricity that they generate.

### SHS-generated electricity in daily life

Despite the continued threats to SHS, Gwou'ulu residents have actively integrated SHS-generated electricity in their lives. Villagers avidly use the telephonic, multimedia and in-built functions of mobile phones and already in 2014 there were over 100 smartphones in the village that required SHS-generated electricity to run (Hobbis, 2020). Reflecting a desire for 'perpetual connectivity with kin' (Lipset, 2018:27; see also Hobbis, 2020), villagers use mobile telephony to stay in touch with relatives in Honiara and, especially, to coordinate remittance requests (Hobbis, 2020). Even more than calls, villagers rely on their electricity-powered phones to consume multimedia files which have, unlike calls, no running costs (Hobbis, 2020). Also popular are phone-based flashlights with which villagers navigate through Gwou'ulu after the sun sets around 6 pm, as well as, to a lesser degree, the calculator function which is often used to tally scores when playing cards (Hobbis, 2020).

Beyond mobile phones, Gwou'ulu villagers rely on their SHS to light up their houses, and specifically, the social spaces beneath them – most

houses are built on stilts. The spaces underneath Gwou'ulu houses operate as a sort of quasi-public salon (Hobbis, 2020: 153) that allows for social interactions to happen incidentally. These salons invite those passing by to join in whatever activity is going on, to exchange stories, talk politics or play cards and are, thus, central to the everyday curation of Gwou'ulu residents' sociality and wellbeing. As Lau ethnomusicologist, Irene Karongo Hundleby notes 'our values relate directly to the maintenance of our relationships – how we interact with one another is paramount' (Hundleby 2017: 109). The spaces underneath houses build the architectural foundation for such positive interaction; though, they are also only able to effectively fulfil their role if they are, indeed, inviting. After sun set, the spaces have to be well-lit to ensure, for example, that no one suspects illicit activities such as an extramarital affair taking place between those meeting each other. Accordingly, households with SHS regularly prioritise lighting up their social spaces, rather than their more private sleeping rooms or kitchens. Simultaneously, those without (functioning) lights prefer to participate in activities under illuminated houses, thus, signalling a desire for visible and as such moral, positive social interaction.

Crucially, and again in direct contradiction to Weir's (2018) but also Sovacool *et al.*'s (2011) claim that rural Pacific Islanders are content with pre-solar energy sources, Gwou'ulu villagers rejected pre-solar alternatives to meet their energy needs for mobile phones and social spaces. In 2014, the only alternative to SHS for charging mobile phones were generators. However, since the petrol required to run them was prohibitively expensive during my fieldwork, the only generator in the village, owned by the Anglican Church, was reserved for major church and school events. Additionally, by 2014, the kerosene lamps that were used to light up social spaces before SHS had disappeared entirely. Unlike SHS, kerosene lamps require financial investments whenever they are used, they emit heat in an already hot enough environment, and constitute a fire hazard. Hence, so my respondents explained, they much preferred SHS and had not invested into new kerosene lamps once theirs had broken down.

### *SHS for social reproduction*

In daily life Gwou'ulu villagers' consumption of SHS-generated electricity remains clearly confined to a limited set of devices – mobile phones and lights – and usages – entertainment and social interactions. This does, however, not mean that the SHS available in Gwou'ulu are not crucial in daily life. On the contrary, how SHS-powered mobile phones and lights as well as SHS themselves are integrated in routines is aimed towards maintaining the relationships at the heart of Lau values, even at the expense of possible cash generating activities. In 2014, Thomas [pseudonym] was considering to invest in a printer/copier to sell print outs/copies to primary schools and churches in the northern Lau Lagoon. Since he had a JICA SHS, Thomas did not expect any problem generating enough electricity for this business venture. Still, he decided against it. He worried that a copy/print business would reduce the amount of electricity he could gift to other villagers. Nearly every time we visited Thomas' house, someone would come by to drop off or pick up a mobile phone. Thomas was charging them 'for free.' When I asked if he had ever considered asking money for this service, he answered with heartfelt laughter. While he might sell a product using electricity to an organisation like the primary school, he would not ask for cash in exchange for charging a mobile phone, even if a complete stranger arrived at his door. Offering free electricity to a stranger, so he explained, would likely allow him to establish a new relationship or to possibly strengthen an existing one that he may not yet be aware of (see also Hundleby, 2017). He would use the opportunity to learn about how they may be related to each other and, thus, they might become familiar through the exchange of electricity.

Thomas is by no means unique in his attitude towards gifting SHS-generated electricity. Sharing of SHS-generated electricity is so prolific that, for instance, Noah [pseudonym] would regularly ask us to charge his phone since he was charging another villager's phone from his SHS-battery, while that particular villager used their SHS to charge someone else's phone. Though owned by individual households, Gwou'ulu SHS are essentially available for charging anyone's mobile phone or for hosting

anyone in a social space as long as the recipient demonstrated an interest in positive social interactions and relationships with those owning the respective system. This means that occasionally, such as during the 2014 election, those with competing political agendas would avoid each other's houses and with it they would avoid each other's SHS and other sharing opportunities. Though this also means that, if or rather when villagers seek to repair (temporarily) weakened relationships they actively seek out access to each other's electric currents alongside other sharable materials.

In other words, circulating SHS-generated electricity rather than consuming it individually allows villagers to both use their electric devices and to maintain their relationships. In fact, the latter is so significant that several villagers emphasised that they would rather not charge their phones than to deny sharing their electricity with someone else. My interlocutors explained that having *their* phone functioning or *their* lights turned on is simply not that important. They could, after all, share the functions of someone else's mobile phone or socialise under someone else's house and by so doing again strengthen their social relationships. As Hundleby notes, the Lau not only 'love to give' but also to 'receive' (Hundleby 2017:110). It is the act of reciprocal giving and receiving that constitutes 'the essential foundations upon which trust is built' (Hundleby 2017:110) and that essentially defines what makes a 'good' person (see also Maggio, 2018). SHS-generated electricity has been integrated into Gwou'ulu daily lives accordingly and following patterns that Philibert and Jourdan (1996) observed with regards to the use of foreign goods in Melanesia more broadly: the significance of these goods for 'collective insertion' (Philibert and Jourdan, 1996:6) in everyday processes of social reproduction subsumes their functionality.

My interlocutors not only achieve this collective insertion by sharing the electricity that SHS generate, but also by sharing SHS themselves as remittance gifts. As I have shown earlier, while Gwou'ulu residents actively work to maintain their SHS, individual SHS are essentially transient in their lives. The ongoing circulation of SHS and the relationships that they forge, however, are not. Because SHS break down, new ones need to be acquired providing another

opportunity for Gwou'ulu villagers to give and to receive, in this case between the village and town. Thus, when a SHS ceases to function, my interlocutors rarely considered it a significant disruption to their daily lives. Instead, breakdown constitutes a temporary shift in individuals' positionality within electrified exchange relations, from provider to receiver of both SHS and SHS-generated electricity. This ensures the possibility of reciprocity and, thus, 'social inclusion' (Dalsgaard, 2013:281) through an ongoing fluctuation between giving and receiving.

### Beyond electrification for development

By focusing on everyday acquisitions, maintenance and usages of electricity in rural Solomon Islands, my research tells a story that notably differs from dominant perspectives on electrification in and for PICs. Gwou'ulu villagers' experiences with electrification echo concerns of existing research about the acceptance of donor initiatives and the adequacies of national political programmes (e.g. see Sovacool *et al.*, 2011; Lucas *et al.*, 2017). However, this inadequacy is less linked to programme design than to rural Solomon Islanders' broader encounters with these actors and the distrust these encounters have fostered. My interlocutors' experiences also reaffirm that a lack of funds is an obstacle in acquiring SHS (e.g. see Lucas *et al.*, 2017; Weir, 2018), but they reject claims that this obstacle is insurmountable without implementing loan systems. On the contrary, as the JICA example showed because 'loans' are suspected to be 'scams' that aim to, in one way or another, disenfranchise rural residents, loan-based systems might struggle with the same distrust that undermines (inter-)national development initiatives for and beyond electrification.

Instead, as also indicated, but not discussed in depth in Cross' (2016) reflection on the proliferation of SHS in Papua New Guinea, kin networks and desire for social reproduction rather than national and international actors drive electrification and shape how my respondents acquire, use and maintain their SHS. Despite high initial acquisition costs, villagers can obtain SHS through remittance networks, specifically, because their individual components can

be assembled over time; and my interlocutors expressed no doubt that remittance networks would be reliable sources of SHS (and other goods) in the foreseeable future. Receiving SHS through remittance networks also serves an important role in strengthening social relationships between the village and town. SHS gifted by urban kin bring electricity to Gwou'ulu and allow urbanites to keep the necessary 'pass-ports' (McDougall, 2017) to return to their ancestral homes.

Social reproduction rather than development is then also central in villagers' use of SHS. SHS-generated electricity primarily illuminates the social spaces underneath houses to encourage positive social interaction and, thus, again to strengthen social relationships. SHS-generated electricity further powers mobile phones which, also for the sake of social reproduction, are used to stay in touch with kin and to 'spend time' in the village, for example, by watching movies (Hobbis, 2020). What SHS-generated electricity is not used for is for cash-generating activities. Because SHS-generated electricity is so significant in everyday life, selling it would remove a notable gift from the reciprocal exchanges so central to relationship-building. Sharing electricity is, in fact, so crucial that my interlocutors even prioritise charging others' mobile phones over their own.

In this context, villagers consider the functionality of their SHS in view of their impact on social reproduction rather than their functionality. SHS that are dysfunctional at the time of purchase are a source of conflict and even violence in Honiara. Dysfunctional SHS undermine urbanites' possibility for relationship-building. They are not only a waste of already severely limited cash resources but also ungiftable gifts. Yet, once SHS arrive in rural areas, my interlocutors are considerably less worried if, or rather when, they become defunct. Villagers maintain their SHS and, contrary to existing research (e.g. see Sovacool *et al.*, 2011; Betzold, 2016; Lucas *et al.*, 2017; Michalena and Hills, 2018), indicated few concerns about their general maintenance skills. They have developed various techniques to keep their SHS alive and by no means accepted or desired a return to pre-solar energy sources. Simultaneously, villagers assumed that their SHS will necessarily lose their functionality because of reasons that could

not be addressed by researchers' calls for more maintenance-focused capacity-building in rural environments (e.g. see Betzold, 2016): low manufacturing quality, humidity or theft. This loss of functionality is, however, not deemed detrimental, but provides another opportunity for relationship-building through exchanges. The owner of a broken or removed SHS can once again receive the gift of electrification, be it by charging their phone at a neighbour's house or by requesting a new SHS from urban kin.

How SHS are actually used in everyday life, rather than how they 'should be' used for development based on policymakers and donors' perspectives, then reveals that, in this case, rural Solomon Islanders have, in fact, already developed an 'energy identity' (Michalena and Hills, 2018:350) that corresponds to their needs, interests and values. This 'energy identity' appears as one that is socially inclusionary because it is integrated into broader processes of social reproduction and independent of the distrusted promises of (inter-)national programmes. It is also an 'energy identity' that is fundamentally anchored in the daily lives of energy users and the life cycles of energy infrastructures that are embedded in broader environmental, infrastructural and political contexts.

## Acknowledgements

I am grateful to the participants of the panel 'The (Non)Negotiability of Infrastructural Development: Examples from the Global South' at the biannual meeting of the German Anthropological Association (DGSKA, 2019) for comments to an early draft of this paper. Special thanks to my father, Roland Ketterer, whose passion for everything solar inspired this research and who provided technical clarifications, and to Geoffrey Hobbis for his support throughout fieldwork and writing. Field research for this paper was supported by the Social Sciences and Humanities Research Council of Canada (201211DVC-236411-303307).

## Notes

- <sup>1</sup> Sovacool et al.'s (2011) study of socio-technical barriers to SHS in Papua New Guinea (PNG) is an exception to

these regional overviews. However, they also position their research within the electrification for development debate and do not substantively discuss actual, everyday electricity use in PNG.

- <sup>2</sup> Ethical approval for this research was granted by Concordia University.
- <sup>3</sup> Geoffrey and I regularly publish together based on joint data collection and analysis (e.g. Hobbis and Hobbis, 2017; Hobbis and Hobbis, 2020), but also individually when the data and analysis, as presented here, reflects our respective individual research agendas.
- <sup>4</sup> For a more detailed discussion of my methodological approach including my positionality as female anthropologists see (Hobbis, 2016).
- <sup>5</sup> A fourth way, not discussed here because of its comparative uniqueness, is the SHS that we brought and left in the village.
- <sup>6</sup> The burning down of Chinese stores is a common response to tensions between Solomon Islanders and Asian immigrants. For example, in 2006, rioters burned down several stores in Honiara's Chinatown. Their owners were accused of meddling in the National Election and/or were broadly recognised for 'mistreating' their indigenous employees (see Moore, 2008).

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