

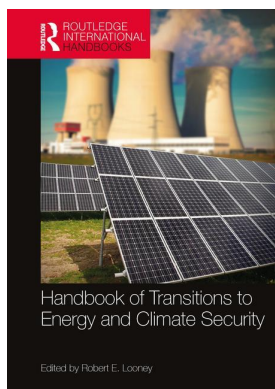
This article was downloaded by: 10.3.97.143

On: 28 Nov 2023

Access details: *subscription number*

Publisher: *Routledge*

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: 5 Howick Place, London SW1P 1WG, UK



Handbook of Transitions to Energy and Climate Security

Robert E. Looney

Transitions to energy and climate security in Thailand

Publication details

<https://www.routledgehandbooks.com/doi/10.4324/9781315723617-20>

Adam Simpson, Mattijs Smits

Published online on: 29 Nov 2016

How to cite :- Adam Simpson, Mattijs Smits. 29 Nov 2016, *Transitions to energy and climate security in Thailand* from: Handbook of Transitions to Energy and Climate Security Routledge

Accessed on: 28 Nov 2023

<https://www.routledgehandbooks.com/doi/10.4324/9781315723617-20>

PLEASE SCROLL DOWN FOR DOCUMENT

Full terms and conditions of use: <https://www.routledgehandbooks.com/legal-notices/terms>

This Document PDF may be used for research, teaching and private study purposes. Any substantial or systematic reproductions, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The publisher shall not be liable for an loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

Transitions to energy and climate security in Thailand

Adam Simpson and Mattijs Smits

Introduction

This chapter examines the transition of Thailand to energy and climate security as an energy consuming country. As an emerging economy in Southeast Asia with a democratic history, albeit one afflicted by persistent authoritarianism, environmental activists and civil society have played a significant role in the development of public energy discourses and, to a lesser extent, government policies. Governance in Thailand tends to oscillate between direct military rule and more competitive elected governments. A coup in May 2014 resulted in the current military regime, which appears unlikely to surrender power to democratic forces anytime soon. Nevertheless, energy policy over the last two decades has remained largely impervious to changes in government, although much of the good work on developing renewable energy markets is unravelling under the current government.

Thailand is highly susceptible to climate-induced weather extremes: it is one of the top ten countries in the Global Climate Risk Index 1993–2012.¹ It is highly dependent on regular monsoon rains for its food production and increased monsoonal variability, resulting in both flooding and drought, is already beginning to have severe impacts on its economy; these impacts are only likely to increase. It is in this context that we consider Thailand's energy politics and the interactions between the concepts of energy security, modernity and sustainability in the development of its energy policies.

From a critical perspective, energy and climate security should both be considered key components of a broader environmental security, where issues of justice preponderate.² While many activist groups promote energy security models that adhere to this approach, government policies have largely adopted a state-centric energy security model that, since the 1990s, has been augmented by neoliberal policies allowing foreign investment and the entrance of private players. In some ways this fracturing of the market has provided space for small scale producers and the renewable energy sector to flourish, but it has also privatized profits while socializing risks.³

At the same time it has begun to outsource the environmental pollution and risks associated with large dams and fossil fuel extraction by developing a slate of these projects in its poorer neighbours, primarily Laos and Myanmar, and importing the resultant electricity. Due to all

these factors, in the policy trilemma that frames this volume Thailand has largely focused on energy security and economic competitiveness, particularly when the benefits have accrued to industries owned and controlled by elite networks, at the expense of climate security and environmental justice.

This chapter discusses these issues in the following six sections. It begins with an examination of the links between the historical and contemporary concepts of energy security, modernity and sustainability in Thailand and the broader region. It then considers the risks to Thailand of a warming climate and the effects on monsoon variability. The next section examines the dynamics of authoritarianism and environmental activism in Thailand, which is followed by an analysis of Thailand's current energy policies and trajectory. The final main section explores activism over Thailand's fossil fuel energy projects focusing on two case studies: the unsuccessful campaign against the Trans-Thai Malaysian (TTM) Gas Pipeline; and the successful campaign against the Bo Nok coal-fired power plant. The conclusion then considers Thailand's progress in the transition to climate and energy security.

Energy security, modernity and sustainability in Thailand

The history of energy, and energy security more specifically, is strongly related to ideas about modernity. Modernity itself is a big and contested issue, both in the public discourse as well as in academia.⁴ The term will here be explored with reference to two ideal-type positions: (1) as a philosophical or epistemological condition; and (2) as a distinct historical or empirical instance.⁵ The term is often used in light of the second position, as a specific state to strive for or which has already taken place. In the context of Southeast Asia, the point of reference for modernity as a distinct instance is often various Western countries (including Japan), but also increasingly other Asian countries, such as South Korea and China.⁶ By contrast, the first position is not related to a specific time or place, but rather reflects a process of social change which can include specific human–environment interactions.

These abstract ideas about modernity can be helpful to think through and analyse ideas about energy and energy security.⁷ Starting with energy security, modernity is often invoked to mean increasing amounts of energy or the use of 'modern' production and use of energy, such as electricity. Throughout history, ideas about what is sufficient energy and what are modern forms of energy have constantly changed. Initially, modern forms of energy security were mainly focused on providing enough energy for the elites in local areas. The broad industrialization of economies has resulted in energy security being primarily considered through the lens of the nation state although it has also expanded to include transboundary energy systems, including electricity grids, gas pipelines and global flows of fossil fuels, such as coal and oil.⁸ Critical approaches to energy and environmental security have begun to link human and energy security although the dominant discourse remains wedded to state-centric notions of energy security.⁹

The relationship between modernity and energy security is not one-directional; rather, they are mutually constitutive. New forms of energy production have profoundly influenced many (if not all) aspects of society, such as the way we travel and what and how we eat.¹⁰ The importance of this dialectical relationship between energy (security) and modernity cannot be overestimated.

Energy security has long included concerns over sustainability; in this historical sense sustainability implied that in order to maintain (and perhaps expand) energy systems, there needed to be sufficient supply of fuel and the system needed to be maintained for the duration of its use. In other words, successful energy systems have always been durable systems, which have

operated or even expanded over the longer term.¹¹ In this sense, sustainability has always been closely aligned with the idea of energy security. Sovacool¹² provides a list of 45 definitions of energy security, most of which assume that it applies primarily to the nation-state; from a critical perspective it could be broadly defined as being achieved when there is sufficient energy available to satisfy the reasonable needs of the political community (the referent object) in an affordable, reliable and sustainable manner as long as pursuing it does not cause environmental insecurity to that or any other political community.¹³

This definition alludes to more recent interpretations of sustainability. In the last half century, the meaning of sustainability in relation to energy has slowly changed. Local pollution, oil crises, globalization and most recently climate change have revealed the many 'externalities' related to many energy production and consumption systems.¹⁴ Nowadays, therefore, energy security and sustainability are no longer seen as aligned. In particular fossil fuel regimes are no longer considered to be sustainable, although they may very well be considered energy secure.¹⁵ Some differentiation may occur between different types of fossil fuel: natural gas or 'clean coal' may be considered more sustainable than 'regular' coal, for example. The situation for renewable energy is more complex, as these can be seen as beneficial or detrimental for energy security. Opponents of renewable energy usually stress the unreliability of renewable energy sources, such as wind or solar. Yet others may point to the benefits of renewable energy to decrease their dependence on fossil-fuel producing countries.

The point is not to develop a definitive argument here whether renewable energy systems are more sustainable than fossil fuel systems. Indeed, the examples above show that this depends a lot on the type of energy system and the criteria used. However, the short narrative above does suggest that modernity is implicated in the history and debates about energy security and sustainability. In order to make these points more concrete, particularly in relation to Thailand, it is crucial to understand how energy security, modernity and sustainability have influenced Southeast Asia.

In Southeast Asia, the early developments of fossil fuel and electricity systems have often been strongly related to dependency, colonialism and state-building, aspects which often hang together.¹⁶ Even in countries that were never colonized, such as Thailand, there is a strong link. The first electricity system in Bangkok, for example, was developed by a Danish company in 1884.¹⁷ Thus, from very early on, the energy systems were following 'Western' models of modernity. Also in this case, the first electricity system and first power plant served the local elite – members of the Royal Family and wealthy areas in Bangkok.

From the late 19th century onwards, energy (and its related infrastructure) also played a critical role in the development of the nation-state in Southeast Asia. Roads and railroads were built to 'open up' the hinterlands of many countries in Southeast Asia and, as a consequence, increase their dependency on the capitals.¹⁸ Parts of the country which previously were almost completely independent, gradually got closer (in terms of time) to each other.¹⁹ As such, energy security was (and arguably still is) closely related to state-security and territorialization in Southeast Asia. While the process of expanding infrastructure is still ongoing, in countries such as Thailand, nearly all parts of the country have become connected to (rail)road and electricity networks (with some notable exceptions), while countries like Myanmar still have a long way to go.²⁰

In some ways, the expansion of energy systems has always been a matter of energy security in Southeast Asia. This expansion was often limited by the resources and infrastructure available, as well as available expertise and technology. However, concerns about sustainability (in its contemporary meaning) also came into play at times, for example in the construction of hydropower. In many parts of Southeast Asia, early energy systems included large hydropower plants,

such as Thailand, Laos and Vietnam.²¹ These were not developed because the governments (and foreign investors and construction companies) were concerned about pollution or emissions, but rather because the resource was readily available. It is only more recently that sustainability, and particularly the threat of climate change, has been put forward as an additional concern.²²

The concerns about sustainability have not only influenced ideas about energy security and modernity, but have also led to increasing contestation of certain energy provision models. While local groups have been resisting state-led energy developments in some parts of Southeast Asia for a long time, they usually have done so because of the local implications of such projects, such as the loss of land, increasing pollution, and influx of migrant workers.²³ Concerns about sustainability have been a more recent issue and have added a new dimension to environmental activism.²⁴ Some protest movements no longer contest projects for their local impacts only, but also because they continue to use fossil fuels or challenge other aspects of sustainability. Later in the chapter we examine two case studies of campaigns against fossil fuel projects but to contextualize this activism we first examine the climate risks that Thailand faces and its current energy politics and policies.

Climate security

While Thailand faces a plethora of environmental issues, in the long term the impacts of global climate change are likely to significantly exacerbate existing environmental insecurities. Climate change is likely to result in more extremes in cold, and particularly heat, affecting regional weather and climate patterns in Southeast Asia. Much of Thailand is low lying, coastal or otherwise susceptible to weather extremes such as cyclones that are likely to be exacerbated in frequency and intensity by climate change as water temperatures increase. Although too much water is often a significant contributor to insecurity drought is also becoming a problem due to increased monsoonal variability.

The most devastating potential impacts of global climate change will affect different geographical areas in different ways with Africa's mortality and economic loss risk largely due to drought while the impacts on Southeast Asia derive from a multitude of climate-related disasters including droughts, landslides, floods and tropical cyclones.²⁵ Thailand is particularly susceptible to flooding and is one of the top ten countries in the Global Climate Risk Index 1993–2012,²⁶ although the floods of 2011 caused 87 per cent of the total damage. The 2011 floods inundated most of central Thailand, and were the worst in 50 years; they also clearly demonstrated that some sectors and people are more important than others.

Climate change has resulted in substantially increased pre-monsoon rainfall in the Chao Phraya River Basin in recent decades and a significant sea level rise at the river outlet; both factors increased the severity of the 2011 floods, which resulted in more than 800 deaths and affected 13.6 million people.²⁷ Although many parts of Thailand experienced this flooding not all communities or people were affected or treated equally. The management of floods and other disasters in Thailand has been organized by elites and their bureaucracies to be deployed in ways that serve their interests and not those of more politically marginalized groups. This was particularly evident in the 2011 floods where privileged areas of the industrial sector and the associated Thai elites' assets were protected while other, less fortunate areas with fewer political connections, were sacrificed.²⁸

The notion of climate security is therefore clearly dependent on the referent object of security. McDonald examines four climate security discourses focused on national security, human security, international security and ecological security and argues that the most powerful discourses of climate security are unlikely to inform a progressive or effective response to global

climate change.²⁹ Similarly, inequalities within society may result in even human security approaches, if applied unevenly, resulting in unequal outcomes. Dominant sectors of society may be privileged in any policy response that attempts to either mitigate or adapt to climate insecurities. It is for this reason that it is crucial that environmental activists, and civil society more generally, are able to give voice to marginalized actors in society. Unfortunately, while Thailand has historically offered more political space for civil society than many of its Southeast Asian neighbours, political space has recently been constricted, with little end in sight.

Authoritarianism and environmental activism in Thailand

Thailand has long been afflicted by authoritarian governance, which has restricted the activities of civil society activists. The ability of social activists and movements to protest openly in Thailand has been largely determined by the nature of the contemporaneous political regime. The ability to substantially influence policy and political outcomes has been tenuous and, even under its most democratic governments, has tended to reflect the extent of accommodation by existing political power structures. These power structures, often allied to the monarchy and linked to structural inequality,³⁰ run deeply through Thai society and stretch back to its earliest history.

Thailand's nominally modern and democratic political era began in 1932 when a constitutional monarchy replaced absolute rule. For many of the subsequent years the military played a significant role in Thai politics with the prime minister a military officer for all but eight years over the period 1938–88.³¹ This militaristic authoritarian rule generally constrained public dissent and criticism of the government. Following a military coup in 1991 and a violent crackdown on unarmed protesters, massive street demonstrations in May 1992, and a carefully orchestrated intervention by the king, squeezed the military from power. There followed a rapid expansion of social activism throughout the 1990s and 2000s in which there was a dramatic increase in NGO activism and increased public debate by academics and intellectuals, although many of the country's powerful and conservative bureaucratic and military structures remained. This increased activism created a new kind of responsive formal politics in Thailand, epitomized by the ascension of Prime Minister Thaksin Shinawatra, although his actions in government eventually cost him the support of many social and environmental activists.

Thaksin initially courted these activists, including those against the TTM Pipeline, but when in power his rhetoric against NGOs and activists provided cover for repressive crackdowns by the security services. Under his 'War on Drugs' between February and May 2003 approximately 2,500 alleged drug traffickers were killed.³² UN Special Envoy for Human Rights, Hina Jilani, noted in the report of her mission to Thailand soon after that many Thai activists, including those opposing the TTM Pipeline, had reported that they were afraid to highlight human rights violations for fear of retaliation by local authorities, 'including possibly being killed under cover of the anti-drugs campaign.'³³ The threat to environmentalists at this time was highlighted by the murder of prominent activist against the Bo Nok power plant Charoen Wataksom in June 2004.³⁴ Apart from the overt harassment of activists and NGOs by the military and police, there was also an increasing threat of violence perpetrated by non-uniformed assassins. Between 2001 and 2005 at least twenty environmentalists, human rights activists and community leaders, including monks, were killed in separate incidents, most of them shot.³⁵

Despite these attacks on civil society, Thaksin's populist policies resulted in his parties dominating Thai electoral politics, with Thaksin-led parties winning comprehensive election victories in 2001 and 2005 and proxy parties winning in 2007 and, led by his sister Yingluck, 2011. Since the turn of the century, therefore, Thaksin or his proxies have won every national

election.³⁶ Due to the undermining of democratic institutions and checks and balances under the 1997 Constitution the Thaksin government constituted a competitive authoritarian regime.³⁷ Nevertheless, this was far more democratic than military rule, which has repeatedly benighted Thailand both before and after Thaksin's government. Thaksin fled into exile following a royal-backed military coup in September 2006 and the military seized power once again in May 2014; it has since denied citizens basic rights including the right to assemble and freedom of expression, and political repression has been extensive.³⁸

Soon after the 2014 coup its leader, General Prayut Chan-o-cha, established a military dominated national assembly, which elected him as prime minister. Having been demonstrably outmanoeuvred in every national election this century the military and its royal supporters have decided to avoid the inconvenience of democratic governance, with subsequent proposed draft constitutions effectively diminishing democratic rule in the country. This constriction of political space for activists, journalists and citizens has had broadly adverse impacts on the development of energy and environmental policies in the country, although improvements in some areas have occurred.

Thailand's energy policies

Thailand's history of democratic governance, although punctuated by authoritarian rule, has resulted in more progressive energy and environmental policies than many other countries in the Southeast Asian region.³⁹ Thailand's environment movement experienced some notable early successes with an official ban on logging in 1989 and the blocking of World Bank-backed Nam Choan Hydroelectric Dam in Kanchanaburi Province in 1988.⁴⁰ Unfortunately, illegal logging continued and the ban saw logging expand unchecked in Myanmar, Laos and Cambodia.⁴¹ These impacts had parallels in the energy sector, particularly in the wake of the Nam Choan Dam cancellation and the long struggle around the Pak Mun dam,⁴² with the state-owned Electricity Generating Authority of Thailand (EGAT) focusing on cross-border energy projects to import energy from its (at the time) more authoritarian neighbours through projects such as the Yadana, Yetagun and Zawtika Gas Pipelines and proposed Salween Dams in Myanmar and the completed Nam Theun 2 Dam and the Xayaburi and Don Sahong Dams currently under construction in Laos. These projects, nominally for the pursuit of national energy security, have had adverse impacts on the environmental security of local communities.⁴³ Despite some successes, however, the opportunities for activists to contribute to Thailand's energy and environmental policy development have been somewhat limited.⁴⁴

The main developmental focus of most recent Thai governments has been on ensuring sufficient electricity for unrestricted domestic industrial development and acting as a regional hub of an ASEAN power grid.⁴⁵ About 70 per cent of Thailand's electricity is generated using natural gas with approximately one-third coming from Myanmar through the three aforementioned pipelines.⁴⁶ Approximately 5 per cent of electricity generation capacity is derived from large-scale hydropower, although if all the plans to import hydroelectric electricity from Myanmar and Laos came to fruition this figure would rise significantly. Dams and hydropower have been promoted by King Bhumibol throughout his long reign and, as with the king himself, have taken on almost mythological proportions.⁴⁷

Despite assertions about the necessity of these projects, the actual electricity needs of Southeast Asian countries are often overstated, with Thailand's energy industry continually overestimating its projected electricity requirements. In 2004 the government's National Economic and Social Advisory Council examined projections by EGAT over the previous decade. It found that in the utility's previous eleven forecasts, ten had overestimated demand, sometimes

by as much as 40 per cent. In addition Thailand's use of energy has been quite inefficient; it uses three times more energy per dollar of GDP than Japan.⁴⁸ Improved energy efficiency measures in conjunction with smaller scale decentralized renewable energy projects could have made some large-scale energy projects redundant.

The approach of Thai governments to energy production since 1992 has been broadly neoliberal, particularly since Thaksin came to power and financed his promises to the poor by the privatization of state assets. Thaksin's first privatization was the sale in 2001 of around 32 per cent of the Petroleum Authority of Thailand (PTT), which was a partner in both the Yadana and TTM Pipeline projects. PTT was Asia's third largest oil and gas firm after China-based Sinpec and PetroChina. The sale, however, seemed to have been 'managed' as large holdings were issued to government ministers' families and friends. The issue price was also undervalued as it quintupled over two years. Five other smaller privatization projects followed the same pattern.⁴⁹ Privatization was clearly used to further enrich the already rich and powerful. As a result, a movement against privatization in Thailand formed with over one hundred civic organizations, development groups and trade unions joining together to oppose both privatization and the politics behind policy corruption.

Between 2004 and 2006 the government proposed twelve further privatization projects with the first and biggest being EGAT. When the privatization was announced in January 2004 it was strongly opposed by EGAT's union, its former governors and activist groups. Nevertheless, in 2005 the government enacted two Royal Decrees that dissolved the EGAT state enterprise and created the charter of EGAT Plc. The Supreme Administrative Court later revoked these decrees, however, and the 2006 coup effectively ended these privatization policies. Recent governments have embarked on a more subtle process of privatization of EGAT through the use of subsidiaries.

Despite the continued dominance of EGAT and associated state energy utilities in Thailand's electricity market, it has one of the most progressive renewable energy policies in the region, with reforms dating back to 1992 establishing markets with feed-in tariffs for Independent Power Producers (IPPs), Small Power Producers (SPPs) and Very Small Power Producers (VSPPs) (initially 1 MW). The SPP programme, launched in 1992, was designed for small plants, under 90 MW. The IPP programme was launched in 1994 and effectively liberalized the market for generating electricity that could be sold to EGAT. Thailand's VSPP regulations were approved by Cabinet under Thaksin in 2002. Since December 2006 VSPP generators have been allowed to export up to 10 MW to the grid with feed-in tariff subsidies for renewable electricity production, and also efficient fossil-fuel Combined Heat and Power (CHP). There are now a large number of small entrepreneurs active in this sector.⁵⁰

Although it was largely government's neoliberal tendencies that launched the sector, NGOs, particularly Palang Thai,⁵¹ which worked on the VSPP policies from 2001, have been influential in its development. Nevertheless, in recent years, particularly under Yingluck's government and the military regime, there have been significant backward steps in energy governance. Many of the effective energy and electricity governance structures that had been established over the last two decades have been undermined with the success of the renewable energy sector now creating fertile ground for well-connected corporations to extract rents. With high rents added onto costs, inevitable price rises are being associated with renewable energy in general, causing potentially long-lasting damage to community support for the sector as a whole.

This outcome seems consistent with Prime Minister Prayut Chan-o-cha's lauding of fossil fuels as an energy source in mid-2015, when he also instructed the Energy Ministry to boost 'public understanding' about the cost of producing electricity from renewable or alternative energy sources, which he argued would lead to higher power bills.⁵² The prime minister has

also used his absolute authority under Section 44 of the Interim Constitution to exempt all kinds of power plants, gas processing plants and other utility plants from regulations under the Town and City Planning Act.⁵³

On the other hand, since the coup there has been some progress on climate change policy, at least on paper, with Thailand finally submitting its Intended Nationally Determined Contribution (INDC) to the UNFCCC in October 2015, stating that it intends to reduce its greenhouse gas emissions by 20 per cent from the projected business-as-usual (BAU) level by 2030.⁵⁴ The Climate Change Master Plan B.E. 2558–2593 (2015–2050) is still awaiting approval from Cabinet but in May 2015 the National Energy Policy Committee (NEPC) approved Thailand's Power Development Plan (PDP) 2015–2036.⁵⁵

The first public hearing for the formulation of the PDP 2015 was held in August 2014,⁵⁶ three months after the coup which had banned protest and restricted political freedoms.⁵⁷ Journalists and activists had been arrested for voicing opposition to the military government. This was not the most conducive environment to encourage dissenting voices and the regime felt little need to listen if there were. An Alternative Energy Development Plan 2015–2036 exists under the PDP 2015 and is administered by the Department of Alternative Energy Development and Efficiency within the Ministry of Energy: it provides the framework for boosting renewable energy use in the country although as part of its remit it envisages 5 per cent of Thailand's electricity production coming from nuclear power by 2036 and, as discussed above, other government policies are acting to undermine the development of a sustainable renewable energy sector.

Activist groups have also critiqued the process of developing the PDP 2015 and its perceived focus on coal and large hydropower. The Network of People Affected by the Power Development Plan 2015, supported by the Thai Climate Justice Working Group, wrote an open letter to the Prime Minister and Minister of Energy requesting the cancellation of the PDP 2015 and the establishment of a more transparent and democratic process.⁵⁸ While Thailand's energy policies in the past have helped develop diverse and, for the region, progressive renewable energy policies, the current trajectory is clearly undermining earlier gains. While the space for environmental activists to influence policy has clearly narrowed it is still instructive for contemporary activists and policy makers to consider two contrasting campaigns against proposed fossil fuel projects.

Campaigns against fossil fuel energy projects

This section examines the strategies and tactics of two environmental campaigns against fossil fuel energy projects in Thailand. The first, ultimately unsuccessful, campaign was against the Trans-Thai Malaysian (TTM) Gas Pipeline Project in Songkhla Province. The second campaign, against the Bo Nok coal-fired power plant, was eventually successful with the power plants still not built on the site. Although both campaigns were against fossil fuel projects it is instructive to note that the gas project was completed while the coal project was cancelled. As noted earlier, emphases on climate security have made natural gas projects more desirable than coal projects. It should also be noted, however, that the gas project, which extracted the gas from the Gulf of Thailand, was geographically fixed while it was possible for the Bo Nok power plant to be moved to another province; this ultimately occurred, as well as shifting the fuel source from coal to gas. While both campaigns suffered from a variety of repressive tactics from government, the campaigns also took place in relatively democratic times, when elected governments could be held to account.

The campaign against the Trans-Thai Malaysian Gas Pipeline

The TTM Gas Pipeline Project through the largely Muslim Songkhla Province in the south of Thailand was punctuated by a variety of local protests following stymied attempts to participate in official public fora, including public hearings. The project required offshore drilling, the construction of two gas separation plants (GSPs) in Chana district on the east coast of Songkhla and the laying of a gas pipeline from the GSPs to the border with Malaysia in the west. The main project proponents were PTT and EGAT, which also planned to build a 700 MW gas-fired power station near the GSP. As the pipeline fed directly from Thailand into the pre-existing Malaysian pipeline network most of the protests and activism occurred on the Thai side of the border. The project was initiated during the Democrat Government of Chuan Leekpai but the project was also taken up by Thaksin Chinawatra when he came to power in January 2001.

Activists began the campaign against the TTM project following the signing of a Memorandum of Understanding between Chuan and Malaysian Prime Minister Mahathir Mohamad in April 1998 and the discovery of plans relating to the industrial development of Songkhla Province within the Indonesia-Malaysia-Thailand Growth Triangle. A broad coalition emerged comprised of environmental organizations, academics and local fisherfolk who argued that serious deleterious impacts upon local communities and their environments would occur for the duration of the project. Local academics at Prince of Songkla University in Had Yai, the capital of Songkhla Province, also questioned the need for the project pointing out that Thailand was importing gas from Myanmar through the Yadana pipeline while planning to export gas to Malaysia. This support from academics in Thailand was crucial to disseminating the campaign's messages throughout the country and was often sought out by the villagers themselves.

Local communities and ethnic minorities were not only most adversely affected by the project, but also the most voiceless communities in the decision-making process. Much of the local activism against the TTM project concerned the lack of genuine consultation and participation in the decision-making processes. The project was carried out under the now-superseded 1997 Constitution, which required greater public participation in development processes and improved checks and balances. The TTM Project was one of the first major tests for the public consultation processes in the Constitution. The Ministry of Industry set up a public hearing in Had Yai in July 2000 although the Environmental Impact Assessment (EIA) had already been completed and published four months earlier.⁵⁹ While the EIA process was underway four contracts had been signed by PTT and the Malaysian corporation Petronas on 30 October 1999. PTT argued that the contracts were non-binding and there would be no fine should PTT abandon the project on environmental grounds. This was at odds, however, with a special committee's investigation in January 2001, which claimed that severe penalty payments would arise over postponement due to the 'take-or-pay' nature of the contracts.⁶⁰ This therefore indicated to activists that the main decisions on the project had been decided upon prior to the results of the EIA and public hearings, with the result that public concerns were relegated to insignificance.

Compounding this impression was the manipulation of public events to avoid dissenting voices. Prior to the hearing military officers were employed as public relations officers and project opponents suggested these had been used to intimidate and harass them. The public hearing was held at the Municipality Hall in Had Yai on 29 July 2000 and academics and university students tried to broaden the discussion to consider the proposed Indonesia-Malaysia-Thailand Growth Triangle, which they considered was a critical issue to be discussed but the chairperson of the hearing, General Charan Kulavanija, rejected these attempts. Many of the

villagers were also excluded from the hearing and violence finally erupted between the opponents of the project and its industry and military supporters as the hearing collapsed.⁶¹ The Ministry of Industry arranged a second public hearing in Had Yai on 21 October 2000 that, again, led to clashes between project supporters and opponents causing the suspension of the meeting.

The new Thaksin government had promised to approach the activists differently to its predecessor and it commissioned reports from the Senate Committee on Environment, the National Human Rights Commission and Chulalongkorn University while Thaksin visited the protesters at Lan Hoy Siab on 4 January 2002 to promise a fair hearing. By May 2002 the reports had been submitted to Thaksin, all recommending that a final decision on the project be postponed until numerous issues related to human rights, the environment and the future energy needs of the region were resolved. Nevertheless on 11 May 2002 the government ignored this advice and announced that it had approved the pipeline.⁶²

For the rest of 2002 local villagers in Chana district and environmental organizations, students and academics around the country took every available opportunity to lobby the government. On 20 December approximately 1,000 villagers accompanied by students and human rights activists travelled the 50 kilometres from their villages in Chana district to Had Yai to protest against the TTM project and to hand a petition to the Prime Minister who was meeting his Malaysian counterpart there.⁶³ Thaksin's aide told them to wait in a specified area and after they did so hundreds of policemen surrounded them and attacked them with batons. The resulting melee left 38 demonstrators and 15 policemen injured. Despite this authoritarian repression Thaksin's electoral popularity ensured that he was re-elected in 2005 with a large majority and the pipeline was eventually completed.

The campaign against the TTM Pipeline was ultimately unsuccessful, because it did not fulfil its aim of stopping the pipeline. It did, however, significantly increase the political and environmental awareness of local communities in Songkhla Province, ensuring that energy and the environment became important issues of political concern. History is, however, repeating itself in the neighbouring Tepha District where EGAT is planning to build a 2,000MW coal-fired power plant, with even worse outcomes expected for the livelihoods of local fishing communities and the Gulf of Thailand's ecosystem. The same tactics used by the government and proponents during the TTM campaign have been dusted off and re-used, with opponents of the project being excluded from public meetings on 27–8 July 2015, by order of the Songkhla governor.⁶⁴ This time, however, there are even fewer opportunities for dissent with a military government installed that is seemingly intent on pushing through fossil fuel projects while it can still rule by fiat.

At a similar time to the TTM campaign there was a more successful campaign against the coal-fired power station at Bo Nok. Despite the contemporary restrictions on political activities there are many lessons from the Bo Nok campaign that could be used to promote sustainability and energy and climate security in the campaign against the Tepha and other coal-fired power plants.

The campaign against the Bo Nok coal-fired power station

As demonstrated in the previous section, the conflicts around the siting of a coal-fired power plant in Bo Nok were significant for other environmental campaigns and more broadly for energy and climate transitions in Thailand. The Director-General of the Department of Alternative Energy Development and Energy Efficiency of the Ministry of Energy summarized it as follows:

These conflicts were a turning point in Thai infrastructure planning, because they were in the time that the Thai society demanded more say in big projects. This was not the only site of protest, but it is the one that got stuck ... and still has an impact, because many schemes are blocked. So planning has become more difficult, because Thailand is still growing, so there are less options.⁶⁵

This section unpacks this statement by discussing 'Bo Nok' as a successful case of environmental activism.

The events in Bo Nok are directly related to the attempts of the Thai government to reform the energy sector, resulting from pressure from the World Bank and the IMF. As one of the first steps, Thailand introduced its IPP policy in 1992.⁶⁶ In the first round of bidding, two coal-fired power stations were proposed in the province Prachuab Khiri Khan, some 300 km south of Bangkok, one in Ban Krut (1400 MW) and one in Bo Nok (700 MW, to be extended to 1,400 MW later). Both projects were initially backed by international companies; Hin Krut by Japanese and Hong Kong investors and Bo Nok by the US-based Gulf company. The remainder of this case study will primarily focus on the situation in Bo Nok, although there are many parallels and indeed synergies with the situation in Ban Krut.

Soon after the IPP bidding was concluded, in 1995, people in Bo Nok noticed that a large amount of land was bought on the coast. This also marked the start of a long period of activism with varying degrees of intensity. An important characteristic was that the movement started and remained strongly driven by people in the local communities. When the company presented its plans to build the coal-fired power plant, there were some immediate disagreements and protests, as people were concerned about the consequences for the environment and their livelihoods. They found out that the coal-fired power station would damage their marine environment, and lead to local air, land and thermal pollution.⁶⁷ The 'movement' in Bo Nok started by contacting the company, the local government and organizing protest activities, such as sending 1,000 letters to the sub-district office and meet with the community from Ban Krut in 1997.

An important change in the movement and profile of the conflict came a few years later, in 1998, when the movement started to attract national, and later international, attention. The protest group in Bo Nok (and Ban Krut) started to team up with academics, NGOs, and other environmental movements in the country (TERRA, AEPS, Palang Thai), drawing on decades of experience and networking on environmental issues. Through these contacts, the movement was able to contest not just the project itself, but also the energy policy and EIA process in Thailand. For example, they proved that the EIA had left out critical information about the impacts on the coral reefs and sea animals. Moreover, they showed that the energy forecasts were too high, resulting in a reserve margin of more than 25 per cent. In addition, they managed to mobilize more than 10,000 people in front of the presidential office and block the Southern Highway, the main road connecting Bangkok with the provinces in the south. This activity – which ended violently – in particular featured in the national media and turned it into a 'national' problem and even internationally, through the involvement of Greenpeace and Probe International.

Importantly, while the movement was supported by a large number of people, it also divided the community in the area from the start. Some people believed that the power plant – and associated industrial development in the area – was a positive development. In addition, there were widespread rumours of the company trying to 'buy' the support of the community and its leaders. Proponents of the power plant in the local area say the same about the movement, pointing fingers at local and international NGOs. While there is no conclusive evidence either

way, the siting of the Bo Nok coal-fired power station did lead to a strong divide in the community, which still remains.⁶⁸

The advantage of the environmental movement in Bo Nok was time. By putting continuous pressure on the company and local, provincial and national governments, they managed to stall the development of the plant, leading to big revenue losses for the IPP company. In Bo Nok alone, 94 different letters were sent to various parties and at least 28 protest rallies organized. These ongoing activities and the changing political situation (Thaksin Shinawatra came to power in 2001), finally led the government to change the siting of the Bo Nok (and Ban Krut) power stations to Saraburi province (in the case of Bo Nok) and switch from coal- to gas-fired power stations.

The story of Bo Nok does not end here. During a series of court cases in the aftermath of the government's decision, the leader of the Bo Nok movement, Charoen Wataksorn, was killed by two hired gunmen in 2004. This killing has never been fully resolved, in part because both of them died shortly after in jail. Moreover, the community remains divided on the topic. As such, this violent history has turned the whole area into a 'place of concern'.⁶⁹

To sum up, there are a number of important features that can be learned from this successful case of environmental activism. First, there are a number of rather unique features of this case, such as the fact that it all took place in a Central Thai province, in a well-off area in which the majority of people supports the conservative Democrat Party. This is in contrast to many environmental movements in North and North-eastern Thailand, where people have fewer monetary and political resources making it more difficult to organize prolonged protest. Moreover, in Bo Nok, the leaders and other key figures were able to challenge the company and the government on the actual content of the EIA and the Power Development Plans, through study of these documents and engagement with other critics of these policies. Many academics and policy makers agree that this was the first time that a 'local' protest movement managed to challenge, and eventually influence, national policy making.

Despite these features, the movement in Bo Nok was not a stand-alone activity, but rather part of a long history of social and environmental movements in Thailand. The people in Bo Nok were able to draw on support and experience from Thai NGOs, academics and also some international support. As the movement grew, the people in the movement also started to become an inspiration themselves for other movements in the other places, such as the controversial Mae Mo coal-fired power stations. Among the clearest features are the statue of the assassinated Charoen and a nearby training centre for environmental activists.

The final outcome of the activist movement was not only a result of the strength of the movement, but also a result of the changing political landscape and discourse about energy security in Thailand: the election of Thaksin Shinawatra as prime minister accelerated the decision not to build the coal-fired power stations. Moreover, there was an alternative solution in the form of a change in siting and fuel-switch from coal to gas. As such the company kept the contract and was even awarded a premium on their tariff as a result of the losses they suffered in the process.

Conclusion

During the writing of this chapter, the latest conflict around fossil fuel energy – an 800MW EGAT coal-fired power station in tourist destination Krabi – is becoming more prominent. This case has many similarities to the cases of Bo Nok and the TTM Pipeline and shows that, despite the non-democratic government, Thailand still has not found a way to transition peacefully to climate and energy security. On a more positive note, General Prayut Chan-o-cha

put the Krabi coal-fired power plant project on hold in July 2015 and set up a joint committee that included all stakeholders to discuss, study and improve the plan, which brought an end to protests outside Government House.

This example makes clear that Thailand's elite is still trying to achieve modernity at the expense of less powerful actors in society, a process that is deeply engrained in its history. However, environmental activists have become more vocal and renewable energy and energy efficiency initiatives are now more seriously considered, even by some more conservative stakeholders. Moreover, in the quest for energy security, neoliberal tendencies have forced the Thai energy sector to open up to international finance. The downside of this process is that Thailand has increasingly 'outsourced' its energy externalities – pollution and protest – to neighbouring developing countries, such as Laos and Myanmar.

One of the case studies in this chapter, on the TTM pipeline, paints a grim picture of the future of energy security, modernity and sustainability in Thailand, namely more of the same centralized energy production without involvement of civil society. The other case study, of the coal-fired power plant in Bo Nok, shows that alternative scenarios are possible, and that the elite has to bend and perhaps at some point fully open up to the demands for more renewable, decentralized and cleaner energy production in Thailand and continue to be an example in the region.

Notes

- 1 S. Krefl, and D. Eckstein, *Global Climate Risk Index 2014* (Bonn, Germany: Germanwatch, 2013), <https://germanwatch.org/en/download/8551.pdf>.
- 2 A. Simpson, *Energy, Governance and Security in Thailand and Myanmar (Burma): A Critical Approach to Environmental Politics in the South* (New York: Routledge, 2014), 191–196.
- 3 Chuenchom Sangarasri Greacen, and C. Greacen, 'Thailand's Electricity Reforms: Privatization of Benefits and Socialization of Costs and Risks', *Pacific Affairs* 77, no. 3 (2004): 517–541.
- 4 A. Giddens, *The Consequences of Modernity* (Stanford: Stanford University Press, 1990); A. Martinelli, *Global Modernization: Rethinking the Project of Modernity* (London: Sage, 2005); U. Strohmayer, 'Modernity', in *Dictionary of Human Geography*, ed. D. Gregory et al. (Malden, MA: Blackwell, 2009), 471–474.
- 5 P. Wagner, *Theorizing Modernity: Inescapability and Attainability in Social Theory* (London: SAGE, 2001).
- 6 S.-J. Han, and Y.-H. Shim, 'Redefining Second Modernity for East Asia: A Critical Assessment', *The British Journal of Sociology* 61, no. 3 (2010): 465–488.
- 7 S. Jasanoff, and S.-H. Kim, 'Sociotechnical Imaginaries and National Energy Policies', *Science as Culture* 22, no. 2 (2013): 189–196.
- 8 G. Bridge, 'Past Peak Oil: Political Economy of Energy Crises', in *Global Political Ecology*, ed. R. Peet, P. Robbins, and M. Watts, 307–324 (New York: Routledge, 2011); V. Smil, *Energy at the Crossroads: Global Perspectives and Uncertainties* (Cambridge, MA: MIT Press, 2003).
- 9 A. Simpson, 'Challenging Inequality and Injustice: A Critical Approach to Energy Security', in *Environmental Security: Approaches and Issues*, ed. R. Floyd, and R. Matthew (New York: Routledge, 2013), 248–263.
- 10 D. Boyer, 'Energopolitics and the Anthropology of Energy', *Anthropology News* 52, no. 5 (2011): 5–7; V. Smil, *Energy in World History* (Boulder, CO: Westview Press, 1994); V. Smil, *Energy Transitions: History, Requirements, Prospects* (Santa Barbara, CA: Praeger Publishers, 2010).
- 11 F. W. Geels, 'Technological Transitions as Evolutionary Reconfiguration Processes: A Multi-level Perspective and a Case-study', *Research Policy* 31, no. 8–9 (2002): 1257–1274; G. Verbong, and F. Geels, 'The Ongoing Energy Transition: Lessons from a Socio-Technical, Multi-level Analysis of the Dutch Electricity System (1960–2004)', *Energy Policy* 35, no. 2 (2007): 1025–1037.
- 12 B. K. Sovacool, 'Introduction: Defining, Measuring, and Exploring Energy Security', in *The Routledge Handbook of Energy Security* (New York: Routledge, 2011), 3–6.
- 13 Simpson, 'Challenging Inequality and Injustice'.
- 14 D. Toke, and S.-E. Vezirgiannidou, 'The Relationship between Climate Change and Energy Security: Key Issues and Conclusions', *Environmental Politics* 22, no. 4 (2013): 537–552.

- 15 R. Hillebrand, 'Climate Protection, Energy Security, and Germany's Policy of Ecological Modernisation', *Environmental Politics* 22, no. 4 (2013): 664–682.
- 16 J. Rigg, *Southeast Asia: The Human Landscape of Modernization and Development*, 2nd edn. (London: Routledge, 2003).
- 17 C. Greacen, 'The Marginalization of "Small is Beautiful": Micro-hydroelectricity, Common Property and the Politics of Rural Electricity Provision in Thailand' (Ph.D. dissertation, University of California, Berkeley, 2004).
- 18 N. Fold, and P. Hirsch, 'Re-thinking Frontiers in Southeast Asia', *The Geographical Journal* 175, no. 2 (2009): 95–97.
- 19 Rigg, *Southeast Asia*.
- 20 R. Lee, 'Tools of Empire or Means of National Salvation? The Railway in the Imagination of Western Empire Builders and Their Enemies in Asia' (working paper, Institute of Railway Studies and Transport History, University of York, Heslington, UK, 2003); N. Starostina, 'Ambiguous Modernity: Representations of French Colonial Railways in the Third Republic', in *Proceedings of the Western Society for French History*, Vol. 38 (Ann Arbor, MI: University of Michigan Library, 2010).
- 21 P. Hirsch, 'Large Dams, Restructuring and Regional Integration in Southeast Asia', *Asia Pacific Viewpoint* 37 (1996): 1–20.
- 22 K. Bakker, 'The Politics of Hydropower: Developing the Mekong', *Political Geography*, 18, no. 2 (1999): 209–232.
- 23 B. D. Missingham, *The Assembly of the Poor in Thailand: From Local Struggles to National Protest Movement* (Chiang Mai, Thailand: Silkworm Books, 2003).
- 24 T. Forsyth, 'Social Movements and Environmental Democratization in Thailand', in *Earthly Politics: Local and Global in Environmental Governance*, ed. S. Jasanoff and M. L. Martello (Cambridge, MA: MIT Press, 2004).
- 25 C. Webersik, *Climate Change and Security: A Gathering Storm of Global Challenges* (Santa Barbara, CA: Praeger, 2010), 85.
- 26 Kreft, and Eckstein, *Global Climate Risk Index 2014*.
- 27 S.-Y. Parichart Promchote, S. Wang, and P. G. Johnson, 'The 2011 Great Flood in Thailand: Climate Diagnostics and Implications from Climate Change', *Journal of Climate* 29, no. 1 (2016): 367–79.
- 28 L. Lebel, J. B. Manuta, and P. Garden, 'Institutional Traps and Vulnerability to Changes in Climate and Flood Regimes in Thailand', *Regional Environmental Change* 11, no. 1 (2011): 45–58; D. Marks, 'The Urban Political Ecology of the 2011 Floods in Bangkok: The Creation of Uneven Vulnerabilities', *Pacific Affairs* 88, no. 3 (2015): 623–651; A. Salamanca, and J. Rigg, 'Adaptation to Climate Change in Southeast Asia: Developing a Relational Approach', in *Routledge Handbook of the Environment in Southeast Asia*, ed. P. Hirsch (New York: Routledge, 2016).
- 29 M. McDonald, 'Discourses of Climate Security', *Political Geography* 33 (March 2013): 42–51.
- 30 K. Hewison, 'Considerations on Inequality and Politics in Thailand', *Democratization* 21, no. 4 (2014): 846–866.
- 31 Pasuk Phongpaichit, and C. Baker, *Thaksin*, 2nd ed. (Chiang Mai, Thailand: Silkworm, 2009).
- 32 Amnesty International, *Thailand: Memorandum on Human Rights Concerns* (London: Amnesty International, 2004).
- 33 H. Jilani, *Report by the Special Representative of the Secretary-General on the Situation of Human Rights Defenders: Mission to Thailand* (United Nations Commission on Human Rights, Promotion and Protection of Human Rights: Human Rights Defenders, 2004), 18.
- 34 Somchai Phatharathananunth, *Civil Society and Democratization: Social Movements in Northeast Thailand* (Copenhagen: NIAS Press, 2006), 222.
- 35 Amnesty International, *Thailand*.
- 36 E. Biel, N. Hicks, and M. McClintock, eds, *Losing Ground: Human Rights Defenders and Counterterrorism in Thailand* (Washington, DC: Human Rights First, 2006), 22; Thitinan Pongsudhirak, 'Thailand's Uneasy Passage', *Journal of Democracy* 23, no. 2 (2012): 47–61.
- 37 Simpson, *Energy, Governance and Security*.
- 38 K. Hewison, 'Thailand: The Lessons of Protest', *Asian Studies: Journal of Critical Perspectives on Asia* 50, no. 1 (2014): 1–15; Pavin Chachavalponpun, 'The Politics of International Sanctions: The 2014 Coup in Thailand', *Journal of International Affairs* 68, no. 1 (2014): 169–185.
- 39 A. Simpson, 'Challenging Inequality and Injustice: A Critical Approach to Energy Security', in *Environmental Security: Approaches and Issues*, ed. R. Floyd, and R. Matthew (New York: Routledge, 2013),

- 248–263; M. Smits, *Southeast Asian Energy Transitions: Between Modernity and Sustainability* (Farnham: Ashgate, 2015).
- 40 T. Forsyth, ‘Environmental Social Movements in Thailand: How Important is Class?’, *Asian Journal of Social Sciences* 29, no. 1 (2001): 5; J. Rigg, ‘Thailand’s Nam Choan Dam Project: A Case Study in the “Greening” of South-East Asia’, *Global Ecology and Biogeography Letters* 1, no. 2 (1991): 46.
- 41 P. Hirsch, ‘Globalisation, Regionalisation and Local Voices: The Asian Development Bank and Re-scaled Politics of Environment in the Mekong Region’, *Singapore Journal of Tropical Geography* 22, no. 3 (2001): 241.
- 42 T. Foran, and K. Manorum, ‘Pak Mun Dam: Perpetually Contested?’, in *Contested Waterscapes in the Mekong Region: Hydropower, Livelihoods and Governance*, ed. F. Molle, T. Foran, and M. Käkönen (London: Earthscan, 2009), 55–80.
- 43 Piya Pangapa, and M. J. Smith, ‘Political Economy of Southeast Asian Borderlands: Migration, Environment, and Developing Country Firms’, *Journal of Contemporary Asia* 38, no. 4 (2008): 485–514; A. Simpson, ‘The Environment-energy Security Nexus: Critical Analysis of an Energy “Love Triangle” in Southeast Asia’, *Third World Quarterly* 28, no. 3 (2007): 539–554; A. Simpson, ‘Challenging Hydropower Development in Myanmar (Burma): Cross-border Activism under a Regime in Transition’, *The Pacific Review* 26, no. 2 (2013): 129–152.
- 44 D. H. Unger, and Patcharee Sirorob, ‘Trying to Make Decisions Stick: Natural Resource Policy Making in Thailand’, *Journal of Contemporary Asia* 41, no. 2 (2011): 206–228.
- 45 Greacen, and Greacen, ‘Thailand’s Electricity Reforms’, 538.
- 46 Simpson, *Energy, Governance and Security*; International Energy Agency, *Thailand: Statistics for This Country* (International Energy Agency, 2015), www.iea.org/countries/non-membercountries/thailand/statistics/.
- 47 D. J. H. Blake, ‘King Bhumibol: The Symbolic “Father of Water Resources Management” and Hydraulic Development Discourse in Thailand’, *Asian Studies Review* 39, no. 4 (2015): 649–668.
- 48 A. Imhof, ‘Making Smart Choices for the Mekong’, *World Rivers Review* 20, no. 5/6 (2005): 8–9.
- 49 Phongpaichit, and Baker, *Thaksin*, 13.
- 50 S. Tongsopit, and C. Greacen, ‘An Assessment of Thailand’s Feed-in Tariff Program’, *Renewable Energy* 60 (2013): 439–445.
- 51 ‘Palang Thai’, Palang Thai, 2015, www.palangthai.org/en/home.
- 52 *Bangkok Post*, 14 August 2015.
- 53 *Prachatai*, 22 January 2016.
- 54 Raweewan Bhuridej, *Submission by Thailand to UNFCCC: Intended Nationally Determined Contribution and Relevant Information* (Secretary General, Office of Natural Resources and Environmental Policy and Planning Bangkok, 2015), http://www4.unfccc.int/submissions/INDC/PublishedDocuments/Thailand/1/Thailand_INDC.pdf.
- 55 Chavalit Pichalai, *Thailand’s Power Development Plan 2015 (PDP 2015)* (PowerPoint) (Bangkok: Ministry of Energy, 2015).
- 56 Ibid.
- 57 Hewison, ‘Thailand: The Lessons of Protest’.
- 58 Network of People, *Open Letter: People’s Demand to Cancel PDP2015 and Start a New Transparent Process* (Network of People, September 7, 2015), www.thaiclimatejustice.org/knowledge/view/126.
- 59 Warasak Phuangcharoen, ‘The Failure of Public Participation in Developing Countries: Examples from the Yadana and JDA Pipeline Projects in Thailand’, *Thai Khadi Journal* 2, no. 1 (2005): 27; Supara Janchitfah, *The Nets of Resistance* (Bangkok: Campaign for Alternative Industry Network, 2004).
- 60 Phuangcharoen, ‘The Failure of Public Participation’, 25–29.
- 61 Phuangcharoen, ‘The Failure of Public Participation’, 27–28; Janchitfah, *The Nets of Resistance*, 47.
- 62 Phuangcharoen, ‘The Failure of Public Participation’, 31–33.
- 63 Jilani, *Report by the Special Representative*, 15.
- 64 *Bangkok Post*, 30 October 2015.
- 65 Jo Garcia, interview with author, 15 September 2011.
- 66 Greacen, C. ‘The Marginalization of “Small is Beautiful”: Micro-hydroelectricity, Common Property and the Politics of Rural Electricity Provision in Thailand’. PhD. dissertation, University of California, Berkeley, 2004.
- 67 N. Kuze, *Multi-Organizational Relations in Social Movement: A Case Study of Anti-Power Plant Movements in Hinkrut and Bonok* (in Thai) (Bangkok: Chulalongkorn University, 2002).

- 68 J. J. Schatz, 'With Their Lives: Those Fighting Toxic Dumping and Coal-fired Power Plants Have an Unfortunate Tendency to Turn Up Dead', *Al Jazeera America*, 5 April 2014.
- 69 C. Schaeffer, and M. Smits, 'From Matters of Fact to Places of Concern? Energy, Environmental Movements and Place-making in Chile and Thailand', *Geoforum* 65 (2015): 146–157.