ASEAN Energy and Gender Report: Development Finance

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Contents

Introduction ........................................................................................................... 1
Interplay between gender equality, energy access and economic empowerment ........................................... 2
Energy and gender access programmes in ASEAN ........................................................................... 4
Definition of development finance ........................................................................... 7
Development finance for energy and gender programmes in ASEAN ................................................... 8
   Analysis by objectives ................................................................................... 9
   Analysis by type of financial instruments ................................................... 11
   Analysis by donors .................................................................................... 12
Gap with other regions ....................................................................................... 15
Discussion ........................................................................................................... 18
Recommendations: The way forward for the ASEAN Member States ................................................... 19
References .......................................................................................................... 21
List of Tables and Figures

Table 1 Energy and gender access programmes in ASEAN .............................................................. 4

Figure 1 Evolution of women's role in the energy sector .................................................................. 3

Figure 2 Development finance of energy and gender programmes by country ................................. 8

Figure 3 Development finance of energy and gender programmes by objectives ............................. 9

Figure 4 Development finance of energy and gender programmes by objectives – a focused view .......... 10

Figure 5 Potential development finance of energy and gender access programmes .......................... 10

Figure 6 Development finance of energy and gender programmes by type of financial instruments .... 11

Figure 7 Development finance of energy and gender programmes by donors .................................... 12

Figure 8 Development finance of energy and gender programmes from bilateral channels ............... 13

Figure 9 Development finance of energy and gender programmes from multilateral channels .......... 14

Figure 10 Development finance of energy and gender programmes – comparison among regions ....... 15

Figure 11 Development finance of energy and gender programmes by objectives – comparison among regions 16

Figure 12 Development finance of energy and gender programmes – comparison with other Asian countries .... 16

Figure 13 Development finance of energy and gender programmes – unexplored objectives in ASEAN .............. 17
Introduction

The Joint Ministerial Statement of the 39th ASEAN Ministers on Energy Meeting in 2021 reaffirmed the regional priority to enhance energy resilience and improve energy security and thereby forming a foundation for an inclusive and just energy transition [1]. The ASEAN Plan of Action for Energy Cooperation (APAEC) 2021-2025, as the regional policy blueprint, is also progressively working inclusivity into its action plans and programmes.

This aspiration complements the ASEAN Community Vision 2025, striving for a people-centred approach which promises that no one gets left behind. The commitment and importance of realising inclusivity, especially through a gender lens, has been declared several times by ASEAN Heads of State, including at the 36th ASEAN Summit in 2020 at which ASEAN leaders recognised gender equality as pivotal to achieving the three pillars of sustainable development: its social, economic and environmental aspects.

The ASEAN Centre for Energy (ACE) through the ASEAN Climate Change and Energy Project (ACCEPT) has promoted the importance of women’s empowerment in the energy sector since 2019 through various initiatives. In 2020, ACCEPT achieved a higher share (62.5%) of women researchers, up from 50% at the beginning of the project. Last year, senior female government officials from ASEAN’s ten ministries of energy, with Norway’s Minister of Petroleum and Energy contributed their perspectives on the vital role that women have as agents of change towards a low carbon society [2].

In 2022, their efforts are continued through this study which explores the question: “Have the government and donor institutions provided enough support for energy development initiatives in ASEAN that consider the gender element?”. This report opens with a discussion of the interplay among gender equality, energy access and economic improvement, and serves as background behind the main research question. Following this is an outline of the funding received in ASEAN for energy and gender related programmes between 2010 and 2019, then data-driven recommendations for policymakers who are involved in planning the funding initiatives aimed at raising the level of gender equality in energy projects.
Interplay between gender equality, energy access and economic empowerment

Women hold a central role in society. In the smallest unit of community – family – women are the caretakers who are responsible for the education and health of children through seemingly routine activities. Cooking, laundry, dishwashing, hygiene activities and schoolwork all require energy. The demand for energy and other household necessities start from the rural communities and drive a nation's economy.

Many studies have been carried out to help us understand the causal correlation between the level of women's access to energy in various developing countries, and poverty. However, little work has specifically examined the situation in Southeast Asia. The ASEAN Committee on Women, the ASEAN Secretariat and the United Nations Entity for Gender Equality and the Empowerment of Women (UN Women) published the ASEAN Gender Outlook (hereafter “the Outlook”) in 2021. This report was the first publication to present a detailed assessment of the gender disparities impeding ASEAN's progress towards achieving the UN's Sustainable Development Goals (SDGs); these disparities are greatly felt by the poorest women belonging to ethnic minorities living in rural areas [3].

The Outlook describes the alarming gender inequality in various sectors of the economy, including the energy sector. As of 2018, the third of ASEAN people - 224 million still lacked clean cooking fuels. Women's health was disproportionately at risk as they are the major domestic energy consumers. The study highlighted that the poorest rural women are the most deprived in access to clean fuels in all countries.

In ASEAN's total labour force, the participation rate of women was only 56%, compared to 79% for men. Of employed women, 67% work in the informal sector, and 3% live below the poverty line despite having regular income. In the energy sector, the employment rate of women is even lower. Only 8% are engaged in the production of crude oil, petroleum products and natural gas. In other words, few women gain economic benefits from the fossil fuel industry, despite the rapid growth of energy demand.

Inadequate energy infrastructure hinders women's ability to do daily household chores efficiently. It means they cannot use their time productively and makes becoming entrepreneurs or having any type of or career outside the home almost impossible. Though other factors, such as level of education, are also crucial in building women's capacity to enter the formal sector workforce or participate in higher-valued informal labour, the access to clean energy and electricity is a key enabling factor in boosting overall economic productivity.
Providing clean energy access to women offers potential multiplier effects whereby the role of women could evolve from mere consumers to entrepreneurs, and later becoming leaders, as illustrated in Figure 1. Similar progress occurs in energy provision, starting from small equipment such as kerosene or solar PV lamps or biomass stoves, to small rooftop PV panels or mini-hybrid electricity generator sets, before progressing to connection to national grids.

Figure 1 Evolution of women’s role in the energy sector [4]
Given the high number of people who still have no access to clean energy, ASEAN Member States (AMS) are often identified by international providers of energy access programmes. Cambodia, Indonesia, Myanmar and the Philippines have hosted a number of initiatives that successfully empower women as the core drivers of community-based energy projects. Most are financed through development finance, philanthropic or blended finance schemes. A summary of some of the success stories is provided in Table 1.

### Table 1 Energy and gender access programmes in ASEAN

<table>
<thead>
<tr>
<th>No.</th>
<th>Country</th>
<th>Programme</th>
<th>Project objectives</th>
<th>Developer</th>
<th>Financier</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Cambodia</td>
<td>ICoProDAC, (Improved Cookstove Producers and Distributors Association of Cambodia). Promotion of Improved Cookstoves in Kampong Cham</td>
<td>Biomass energy and improved cookstoves</td>
<td>Geres</td>
<td>Undisclosed</td>
</tr>
<tr>
<td>2.</td>
<td>Indonesia</td>
<td>Wonder Women [6]</td>
<td>Solar lights, clean cookstoves</td>
<td>Kopernik, ENERGIA</td>
<td>Philanthropic funds from individual donors and corporate grants</td>
</tr>
<tr>
<td>3.</td>
<td>Indonesia</td>
<td>BIRU (Indonesia Domestic Biogas Programme) [7]</td>
<td>Biogas</td>
<td>Yayasan Rumah Energi</td>
<td>Blended finance from private sector, BNI, Rabobank Foundation and Kiva</td>
</tr>
<tr>
<td>4.</td>
<td>Indonesia</td>
<td>Multiple energy access programmes [8]</td>
<td>Micro hydro power plant</td>
<td>IBEKA</td>
<td>Multiple governments and multilateral agencies</td>
</tr>
</tbody>
</table>
Groupe Energies Renouvelables, Environnement et Solidarités, better known as Geres, is an international non-governmental organisation (NGO) which has carried out various energy access programmes in Cambodia since 1994 and Myanmar since 2014. In Cambodia, Geres facilitated community access to biomass energy and improved cookstoves by studying the local culture of targeted communities. The dissemination of new and improved energy products involved local pottery artisans and resulted in 3,000 jobs being created, of which 52% were taken by women.

In Myanmar, a similar approach was replicated by Geres in SCALE (Strengthening improved Cookstove Access towards a better quality of Life and Environment). By 2018, the beneficiaries were 61 artisans, of which 40 were women. Some 70 heads of companies, half of whom were women, distributed and re-sold improved cooking stoves. In the rural energy access programme, Geres trained ten women to promote and sell sustainable energy solutions that enabled women in the most remote villages to study or work in the evenings.

In Indonesia, the Wonder Women programme has empowered 600 women to become social entrepreneurs through the sale of solar lights, clean cookstoves and water filters to more than 120,000 people at as close to retail prices as possible. This has brought electricity, modern cooking technologies and clean water to the most remote places of Indonesia. A co-benefit for the saleswomen and their families has been the extra income.

This programme starts with philanthropic funds which cover the upfront costs of products, shipping and capacity building activities. The revenues are then reinvested in the purchase and delivery of the next batches. This model had been replicated by many NGOs that develop small-scale biogas projects which require relatively small capital. Some capitalised on the model, for example the BIRU (Indonesia Domestic Biogas programme). Biogas became more popular in Indonesia because it helps agricultural-based communities become self-sufficient. Moreover, as a source of heat, the sale of bio-slurry for organic fertilisers offers additional income.

Indonesia also witnesses hundreds of running micro-hydropower on rural villages that were initiated by IBEKA with the support of many donors since 1992. Currently IBEKA is running 88 energy access programs all over Indonesia, and just launched the ACCESS program which aims to build 23 solar power plants by end of 2022. Beside renown as the pioneer of energy access and gender programme, IBEKA is the embodiment of successful social entrepreneurship with a woman at the top leadership, Tri Mumpuni.

In the Philippines, a more advanced energy access programme has existed in Tinglayan since 2003. With special attention to indigenous communities, the 33 kW micro hydropower plant was built and able to provide 300 households and community buildings with electricity for
lighting and cooking. It even produces a surplus of 25 kW of electricity which is channelled to power two rice mills and a sugarcane press, allowing the community to earn additional revenue.

In Vietnam, GreenID piloted rooftop solar programme on 90 households in Hanoi since 2018 and recently in 2020, on 45 houses in Da Nang. This has helped the local communities to improve their income through reducing electricity consumption, while promoting the value and benefits of renewable energy technology.

Definition of development finance

Development finance refers to public-sourced funding which is used to facilitate private sector investment in countries where the political and commercial risks are too great to attract pure private-sourced capital. Development finance institutions (DFIs) use loans, loan guarantees, equity investments and other financial products. They include multilateral development banks, national development banks, bilateral development banks and several other financial institutions [13].

In recent years, development finance has increasingly become an important tool to advance the progress of SDGs, alongside official development assistance (ODA). This is financial support – either grants or concessional loans – from the OECD’s Development Assistance Committee (OECD-DAC) member countries to developing countries. Both are tracked and measured in the OECD’s Credit Reporting System (CRS).

The resource flows beyond ODA include foreign direct investment, private export credits, securities of multilateral agencies and other investment portfolios, i.e., bank lending and the purchasing of bonds, shares, etc. While a new funding pathway, “private development finance”, has been classified, there are still many transactions by the official sector which have some development objectives, but their grant element is less than 25%. As the volume of this last group is quite significant, OECD monitors it under the label of “other official flows”.

Based on information from the OECD’s CRS, this report elucidates the flow of development finance devoted to energy and gender programmes in ASEAN from 2010 to 2019. Apart from Brunei Darussalam and Singapore, which are categorised as high-income countries, the AMS are classified as eligible recipients of ODA [14]. This report also provides further insights from various perspectives such as the type of financial instruments, the donors and objectives, and how ASEAN compares with other regions.
The successful energy and gender access programmes were funded mainly by development finance. Despite that, its contribution to energy projects with a specific gender equality objective was a mere 3.3% of the total devoted to energy projects over the last decade. The share for gender projects was similar, at 2.7%. We may expect a much smaller share for projects that have gender and energy access objectives. In total, USD 707.1 million was spent for energy and gender programmes between 2010 and 2019.

As depicted in Figure 2, the development finance devoted to energy and gender programmes increased from USD 29.8 million in 2014 to USD 225.1 million in 2016. The main recipient of energy and gender funding was Vietnam with a 90.4% share over the past ten years. Minor shares went to Indonesia at 3% and Myanmar at 2.7%. The annual trend indicates that funding to Indonesia was prioritised in early years, but in 2014 most went to Vietnam. A notable increase in funding sent to Myanmar started in 2018.
Further investigation into more detailed objectives (Figure 3) indicates that most energy and gender projects, 63.8%, were related to coal-fired power plants. Another 20.4% went towards the improvement of electric power transmission and distribution in centralised grids. Although energy access was not explicitly monitored in the OECD’s CRS, this objective may fall under the category of energy generation of multiple renewable technologies (3.2%), biofuel-fired (1.8%), hydro-electric (5.1%), or solar power plants (0.7%), notably the community-scale power plants with an installed capacity of less than 100 kW.

To obtain a clearer view of energy and gender access programmes, the analysis is extended in Figure 4 by omitting the financing of coal-fired power plants and improvement of transmission and distribution which was allocated mostly to Vietnam. The funding for energy and gender access projects could reach USD 76 million, or equivalent to the total of energy generation of multiple renewable sources, biofuel-fired, hydro-electric and solar power plants. The financing of energy generation of multiple renewables was spent mostly in Cambodia (USD 5.8 million), biofuels in Vietnam (USD 12.2 million), hydro-electric in Vietnam (USD 30.5 million), and solar power in Myanmar (USD 3.3 million).
Unlike the yearly trend of the energy and gender programmes, the increase in potential funding for energy access in particular was more gradual, as reflected in Figure 5. It peaked in 2014 at USD 18.8 million and dropped to USD 5.3 million in 2016, then returned to around USD 16 million in 2017 until 2019. The funding for energy generation of multiple renewable technologies accounted for a large share in 2011 (USD 3.6 million), 2018 (USD 3.9 million) and 2019 (USD 5.4 million), for biofuel in 2018 (USD 4.3 million), for hydropower in 2014 (USD 13.3 million), 2015 (USD 12.9 million) and 2017 (USD 7.9 million).
Analysis by type of financial instruments

Over the past ten years, development finance for energy and gender programmes was mobilised only in the form of ODA grants and loans. ODA loans dominated (88.4%) of the development finance whereas grants accounted for only 11.6%. From 2010 to 2013, the ODA grants were the common type of financing until the ODA loans rapidly increased in 2014. The level of ODA grants remained at around USD 10 million per year. In other words, the ODA loans were the main contributor to the annual change between 2014 and 2019. Figure 6 also indicates that almost all of the ODA loans were allotted to Vietnam while the ODA grants were relatively more equally distributed among the other AMS.

Figure 6 Development finance of energy and gender programmes by type of financial instruments
Analysis by donors

The donors can be categorised into two broad groups, the bilateral and multilateral channels. The development finance fell under the bilateral framework if the transaction was between countries, from a developed country to any developing country. The donor country could be a member of the DAC (the OECD Development Assistance Committee) or non-DAC. To date, the CRS monitors the flow from 30 DAC member countries and from 25 non-DAC countries.

On the other hand, financial assistance from an organisation to any low- or middle-income country is referred to as multilateral flow. The CRS has captured the funding from 65 international organisations such as the UNDP, United Nations Environment Programme (UNEP), International Monetary Fund (IMF), Asian Development Bank (ADB), Global Green Growth Institute, Global Environment Facility, Green Climate Fund, and from 39 private foundations such as the Bill & Melinda Gates Foundation, IKEA Foundation, etc.

In ASEAN, energy and gender projects were predominantly supported by bilateral agreements (88.3%) over the past decade. The contribution of multilateral funding in 2014, 2015 and 2017 is portrayed in Figure 7. This figure further indicates that bilateral assistance was always the major source, except in 2014 and 2015. The increase in development finance in 2016 was mainly from bilateral cooperation. Moreover, bilateral funding always overshadowed the alternative in all AMS.

Figure 7 Development finance of energy and gender programmes by donors
As apparent in Figure 8, Japan was the principal donor of bilateral assistance over the decade, with significant contributions between 2016 and 2019. In the second place was Germany with a 2.6% share. Among the AMS, Vietnam received the most bilateral funding from Japan. Other notable donors were Germany with USD 9.1 million of assistance in Cambodia and USD 5.7 million in Myanmar; the United States with USD 9.1 million in Indonesia; Australia with USD 8.2 million in Lao PDR; and the United Kingdom with USD 6 million in Myanmar.

Despite their minority share, multilateral donors were equally important. As can be seen in Figure 9, most of the multilateral assistance came from the ADB (97.6%). The other two agencies were the Global Environment Facility (1.9%) and Global Green Growth Institute (0.5%). Most multilateral flows from the ADB went to Vietnam. The AMS did not receive any multilateral funding between 2010 and 2012 or in 2016.
Figure 9 Development finance of energy and gender programmes from multilateral channels
Gap with other regions

While the development financing for energy and gender projects in ASEAN increased over the decade, there was still a huge gap compared to other regions, as reflected in Figure 10. From the overall budget spent in the world – USD 11.4 billion – ASEAN received only 6.2%, which was a very small share of that given to Asia as a whole (35%) and that given to Africa (29%). The other regions which gained amounts comparable to ASEAN’s were the Middle East, Europe and South America. Furthermore, considering the three-fold increase in development finance in 2014, the portion allotted to ASEAN was negligible until the sudden additional inflow in 2016. In this particular year, ASEAN’s share was proportional to Asia’s and Africa’s, at around 20%.

Figure 10 Development finance of energy and gender programmes – comparison among regions

An extended identification of the financing flow for specific objectives is provided in Figure 11. Surprisingly, ASEAN is the only region that acquired hefty assistance for coal-fired power plants that also has a gender element in its programme. The previous section pointed out that most of this assistance went to Vietnam. However, for the rest of this category, ASEAN is lacking in comparison to other regions. The obvious difference can be observed on the projects relating to the improvement
of electric power transmission and distribution, energy generation from renewable sources, energy policy and administrative management, and solar energy for centralised grids. This assessment also shows that ASEAN was generally behind in areas that may relate to energy accessibility (inside the highlighted boxes). A closer look at the Asian countries that have similar energy problems with ASEAN member states - Figure 13 - emphasises the shortfall of assistance in the aforementioned categories.

*Asia region, excluding ASEAN

Figure 11 Development finance of energy and gender programmes by objectives – comparison among regions

Figure 12 Development finance of energy and gender programmes – comparison with other Asian countries
To identify the energy problems in ASEAN that have yet to be addressed through a gender lens, Figure 12 shows the financing support for those objectives which has been given to other regions. Mainstreaming gender in the following eight objectives may help ASEAN improve the energy access rate: energy conservation and demand-side efficiency, energy education/training, energy research, geothermal energy, hybrid energy electric power plants, non-renewable waste-fired electric power plants, retail gas distribution and wind energy.

Figure 13 Development finance of energy and gender programmes – unexplored objectives in ASEAN

*Asia region, excluding ASEAN
Analysis of OECD data provides a new perspective on the progress towards closing the gender gap in ASEAN. Yet there are some limitations, including the classification of gender projects receiving ODA funds. Although allocated bilateral ODA and total disbursement of gender projects are at their peak, better data classification is needed to obtain a precise grasp of gender-related financing [15].

The “gender equality” tag was only recently added in the analysis of donor profiles. The terms related to it, such as feminism, women and gender equality, are now given increased visibility in donor countries’ development assistance strategies. Donor countries’ projects are categorised in tiers depending on the extent to which they focus on gender equality. They are marked as “0” or not targeted, “1” or significant or “2” or principal. These markers are decided during the screening process. Donors can leave them blank, causing some of the funding to be categorised as “not screened”.

There has been a drop in funding screening since 2018. This subsequently makes it difficult or even impossible to determine the intent of projects that are not screened against OECD gender markers, and inevitably reduces the transparency in gender-targeted funding data. Self-reporting also has limitations in that each country’s definition of these gender markers can vary, increasing
Going back to the core problem, women are the most affected and it remains crucial that regional and national initiatives place a special emphasis on vulnerable groups of women and girls. To accomplish the SDGs, a double strategy is required: gender equality must be addressed separately and utilised as a catalyst to advance economic recovery and the energy transition. To address the gender disparity, recommendations include:

1. **Forming an integrated ASEAN roadmap to achieve gender equality** that each decision-maker in every member state agrees to commit to.

2. **Address gender disparity as a national priority.** By doing so, the preceding steps such as data-taking and capacity building become more natural to do.

3. **Implement gender-specific indicators to accurately track gender growth data that can be used in future policy frameworks.** The collection and use of gender statistics are crucial to ensure that national policies are guided by evidence, and to monitor progress towards the effectiveness of such programmes. To boost its availability, governments must ensure that this problem is at the forefront of their national development strategies. It can be done by providing financial assistance for gender data generation and capacity building for developing gender statistics. While women are heavily dependent on energy, ASEAN gender data are scarce for the energy sector. Thus, more data are needed to gain greater accuracy in the effectiveness of gender programmes. It is also crucial to encourage decision-makers to take such data into consideration when formulating policies.

4. **Formulate adequate regulatory frameworks to encourage women’s participation in the energy sector.** Select the sectors which would involve increasing female participation and create concrete, achievable targets relating to the percentage of women in the industry.

5. **Deploy more renewable energy projects in energy and gender projects** to involve a gender perspective in the energy transition, hence ensuring that women are mutually benefitted by the transition.
6. **Encourage public-private partnerships to implement impactful gender-based corporate social responsibility (CSR) programmes** focused on energy development especially in rural areas, so as to empower women in household activities and caretaking. This can be done by incentivising public and private companies with CSR programmes aimed at closing the gender gap.

By determining which energy issues received less attention from governments and development finance donors over the past decade, ASEAN policymakers can understand which parts of the energy sector should be focused on. The information on donors from both governments and multilateral agencies also serves as a good reference for prioritising funding opportunities. Lastly, understanding the various types of financial instruments is important in designing the strategy in order that the spent budget attracts the participation of the private sector.
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ACE is an intergovernmental organisation within ASEAN structure that represents the 10 ASEAN Member States’ (AMS) interests in the energy sector.

NUPI carries out research on international issues of importance to Norway and the world.

The views expressed in this policy brief are those of the author(s) and do not necessarily reflect those of ASEAN Centre for Energy (ACE) as an institution, any associated ASEAN Member States/Institutions/Individuals, or partner institutions.

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