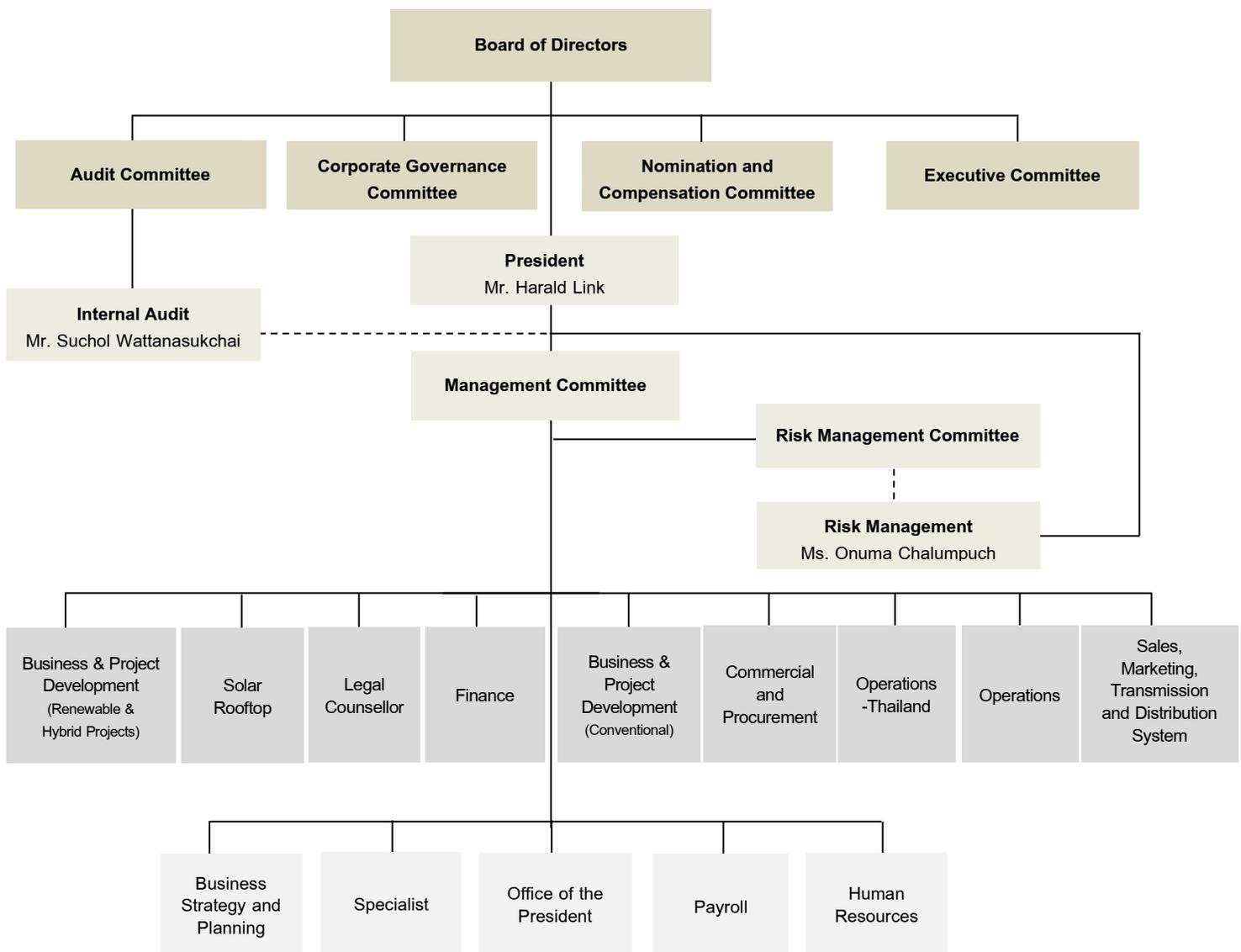


## Risk Management

### Governance

B.Grimm Power establish the Risk Management Committee (RMC) to establish and review the risk management policy, align strategies that reflect and cover operating risks, and continuously supervise risk management for ongoing efficiency and effectiveness. RMC reports to the Management Committee and the Board of Directors. We also have the Risk Management Unit is responsible in place, which is responsible for communicating risk policies and processes internally, assuring effective controls, analysing current risks and identifying potential risks affecting the company, ensuring business heads understand the risks that might affect their departments; ensuring individuals understand their own accountability for individual risks, as well as communicating the external risk posed by corporate governance to stakeholders. The Head of Risk Management Unit report directly to the President and administratively to the RMC.

Also, B.Grimm Power has the Head of Internal Audit, who report directly to Audit Committee who oversees to ensure that Internal Audit Department performs internal auditing with independence, objectivity, integrity, and expertise, in adherence to the internal audit standards. The Audit then report to the Board of Directors. In addition, the Head of Internal Audit reports administratively to the President, who subsequently reports to the Board of Directors.



## Emerging Risks 2020

### 1. 4D1E Policy (Decentralisation)

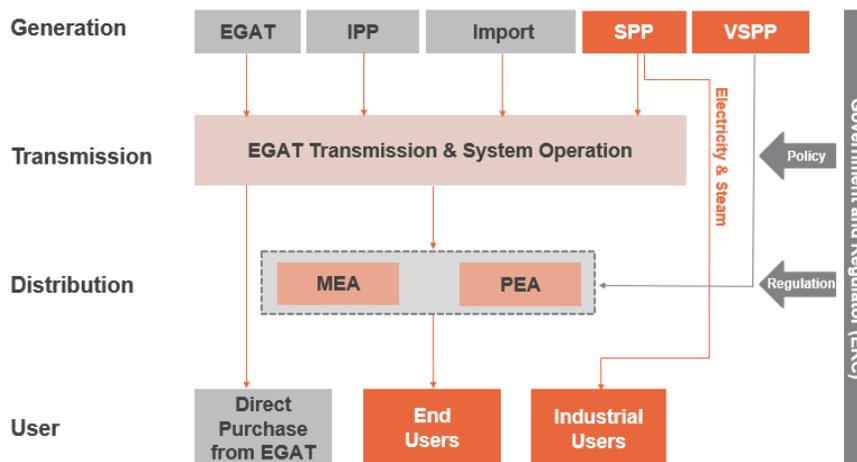
<b>Types</b>	Economic risk External risk
<b>Events</b>	The 4D1E Policy, in which decentralisation is an integral component, was announced at the end of 2019. In addition, private companies with shipper licenses began procuring and selling liquefied natural gas in 2020.
<b>Impacts</b>	B.Grimm is likely to see a significant reduction in revenue from EGAT (64 percent of B.Grimm's revenue in 2020) in the next 15 years and beyond after the expiration of the current power purchase agreements.
<b>Mitigation</b>	B.Grimm will cautiously adapt our strategy and continue expanding into renewable energy and hybrid systems to provide comprehensive public utility services.

#### Risks

Thailand's power generation industry is now leaning towards decentralisation, following the reveal of the Ministry of Energy's 4D1E Policy at the end of 2019, which includes 1. decarbonisation, 2. digitalisation, 3. decentralisation, 4. deregulation, and 5. electrification. Furthermore, the Office of the Energy Regulatory Commission (ERC) began issuing shipper licenses to private companies in 2020, enabling them to purchase and sell liquefied natural gas (LNG). This practice has increased the flexibility with which natural gas can be procured, promoting decentralisation.

As of 2020, B.Grimm Power's primary source of revenue (87 per cent) is the power produced by its industrial power plants. A closer examination shows that most of its income (64 per cent), as proprietor of Small Power Producers (SPPs), comes from the power directly sold to the Electricity Generating Authority (EGAT) pursuant to SPP power purchase agreements (PPAs). Under Thailand's Enhanced Single Buyer Structure, EGAT is the sole purchaser of electricity from its own power plants, independent power producers (IPPs), SPPs, and other producers in neighbouring countries. This state enterprise then distributes power to users via the Provincial Electricity Authority (PEA) and the Metropolitan Electricity Authority (MEA). Therefore, decentralisation and installation of power generation systems close to users are likely to reduce the demand for electricity from PEA's and MEA's networks. When this occurs, EGAT will almost certainly lower the volume of power purchased from IPPs and SPPs once existing PPAs expire.

#### Structure of Thailand's Power Generation Sector

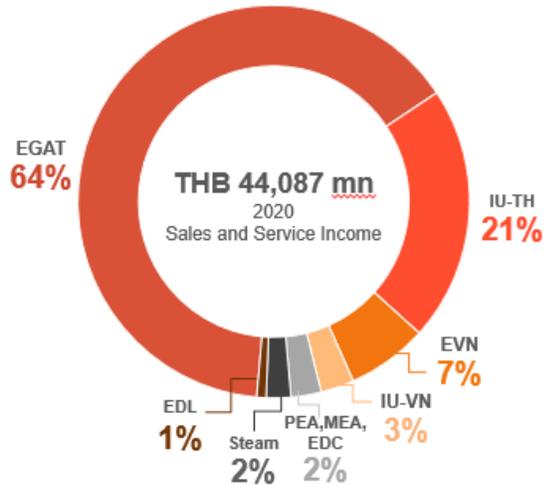


Source: EGAT

### Impacts

Most of B.Grimm Power’s revenue (64 per cent as of 2020) comes from its long-term SPP power purchase agreements (PPAs) with EGAT. These typically have a duration of 20–25 years. Five of them will expire in 2022, which is when many of B.Grimm’s new power plants currently under construction will begin their commercial operation. Meanwhile, the remaining SPP PPAs will not expire for another 15 years.

### Revenue by Customers



Source: B.Grimm Power

At the end of 2020, B.Grimm Power has 20 small power producers (SPPs), 18 of which are operational while the remaining two are under construction. Five of its SPPs and their power purchase agreements (PPAs) with EGAT are expiring between 2019–2022. Fortunately, the Royal Thai Government, recognising the critical role that SPPs play in the industrial sector, has extended B.Grimm’s PPAs and allowed replacement powerplants to be built. In 2022, these new powerplants will begin commercial operations.

Although B.Grimm’s current PPAs, including those of the projects currently under construction, will not expire for another 17–27 years, the authorities have not committed to further extending them or authorising B.Grimm to construct additional replacement power plants. This ambiguity is a long-term risk from B.Grimm’s point of view. In addition, the policy advocating decentralisation and the consequential drop in demand are likely to have an impact on B.Grimm’s revenue in the long run since its PPAs with EGAT currently account for 64 per cent of its revenue, based on 2020’s data.

### Risk Mitigations

B.Grimm Power comprehensively assesses short- and long-term risks. Although the existing power purchase agreements (PPAs) with EGAT ensure cash flow for stability for the next 15 years, the company has seriously considered this risk dimension. It plans to decentralise its businesses and increase the number of PPAs with private users in the following ways:

1. B.Grimm plans to increase direct PPAs with industrial customers from 611 megawatts in 2020 to no less than 850 megawatts by 2025.
2. In response to the decentralisation policy, the company is also expanding its independent power supply (IPS) business:
  - Having been granted a shipper license, B.Grimm Power began importing its own liquefied natural gas (LNG) in 2020, which has enhanced the flexibility and agility of its IPS establishment.
  - B.Grimm will be providing power and public utilities to commercial buildings and real estate projects through a joint venture with Univentures Public Company Limited (UV), as announced in January 2021.

Joint Venture with Univentures Public Company Limited



Source: B.Grimm Power

- B.Grimm signed a memorandum of understanding with PEA in October 2019 and MEA in April 2021 to prepare transmission lines for the expansion of its IPS business.
- In 2020 B.Grimm Power began the construction of a hybrid co-generation power plant in the U-Tapao Airport area, comprising an 80 MW co-generation power plant, a 15 MW solar farm, and a 50 MW-hour energy storage system (ESS). Its commercial operation is planned for 2023.

Hybrid Co-Generation Power Plant near U-Tapao Airport



Source: B.Grimm Power

**2. Increase in Thailand’s EV production following the EV Board establishment in 2020**

<b>Types</b>	Technology risk External risk
<b>Events</b>	The Thai government established the National Electric Vehicle Policy Committee (EV Board) in 2020 to advance Thailand’s EV industry. In 2021 the EV Board set a target for EV production to account for 30 per cent of Thailand’s vehicle production by 2030.
<b>Impacts</b>	There is a significant level of risk on B.Grimm’s revenue from producers of automotive parts (41 per cent of revenue from industrial customers or 9 per cent of 2020’s total revenue) over the next 5–10 years.
<b>Mitigation</b>	B.Grimm will regularly monitor its customers’ short- and long-term business plans, explore the demand from other industrial plants in the area, and lower parts manufacturers to 25–28 per cent of all industrial customers in Thailand by 2025. B.Grimm will also expand its customer base to include emerging businesses with great long-term growth potential, such as data centres, EV component manufacturers, and food industry manufacturers.

**Risks**

The automotive parts manufacturing industry is vital to B.Grimm Power because it accounts for 41 per cent of its total domestic industrial electricity demand. Despite Thailand’s long-standing history as a global automobile manufacturing base, with a large automotive supply chain and numerous manufacturers of parts for petrol and internal combustion engine (ICE) vehicles, the country’s automotive landscape is gearing up for change. Much like the rest of the world, Thailand has an obligation to reduce its greenhouse gas emissions while also further developing its technology industry. As a result, it is now leaning towards the adoption of electric vehicles (EVs). This transition from ICE automobiles to EVs will inevitably and significantly disrupt the supply chain and all the auto parts manufacturers involved, because a typical ICE vehicle requires as many as 30,000 parts, whereas an EV only need about 5,000.

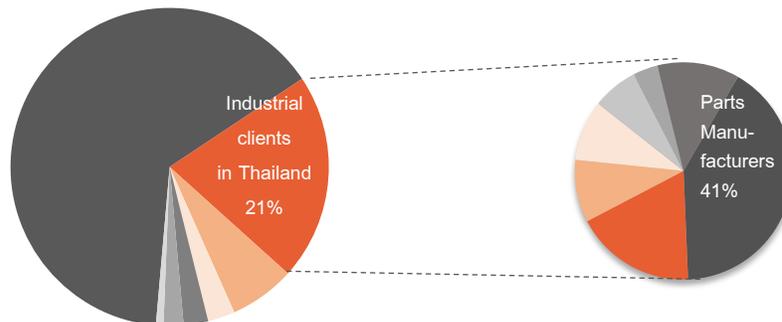
The policy push for EVs in Thailand was officiated in 2020, when the National EV Policy Committee, also known as the EV Board, was established to drive the country’s EV industry forward. The EV Board set a national target in May 2021 for zero-emission vehicles (ZEVs) to account for 30 per cent of all car manufacturing in Thailand by 2030.

**Impacts**

As of 2020, the electricity sold to industrial customers in Thailand accounts for 21 per cent of B.Grimm’s total revenue. It is a substantial business with a higher profit margin than electricity sales to EGAT. Additionally, a closer inspection reveals automotive parts manufacturers’ electricity consumption makes up 41 per cent of all electricity distributed to B.Grimm’s industrial clients. Based on its analysis of vehicle components, B.Grimm estimates that the transition from ICE vehicles to EVs will have an adverse impact on 30–40 per cent of its automotive parts manufacturing customers.

2020 Revenue by Customer Groups

Distribution of Power to Industrial Clients



**Risk Mitigations**

Because B.Grimm Power has always kept a close eye on and analysed its customers' business situations, trends, and long-term plans, the company is always prepared to fine-tune its business plan in response to change. In addition, B.Grimm Power surveys the demand for high-quality electricity of various factories in every industrial estate with a B.Grimm Power SPP power plant on a regular basis. With this level of vigilance, B.Grimm can onboard a new user promptly if an existing client plans to reduce its production capacity.

Furthermore, B.Grimm Power is reconfiguring its industrial customer base. Other industries, such as petrochemicals and food and beverage, are being targeted for expansion. B.Grimm expects that by 2030 auto parts manufacturers will only consume about 25–28 per cent of the electricity it distributes to Thai industrial customers. At the same time, the company is broadening its customer base to include emerging businesses with high long-term growth potential, such as data centres, EV component manufacturers, and food industry manufacturers. It will also venture into the business of providing comprehensive utility services to commercial buildings and real estate projects.