

Submission to the HKIE Executive

Report of 37th Conference of the
ASEAN Federation of Engineering
and 26th Young Engineers of
ASEAN Federation of Engineering
Organisation Conference

10 - 13 September 2019 Jakarta

**The Hong Kong Institution of Engineers
Young Members Committee**

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1. Introduction

1.1 Background

The 37th Conference of ASEAN (Association of Southeast Asian Nations) Federation of Engineering Organisation (CAFEO 37) in conjunction with the 26th Meeting of Young Engineers of ASEAN Federation of Engineering Organisation (YEAFEO 26) was the highlight event of the ASEAN Federation of Engineering Organisation.

AFEO began in 1973 as an engineering convention held between The Institution of Engineers Malaysia (IEM) and The Institution of Engineers Singapore (IES). The primary objective of the IEM/IES Engineering Convention was to promote interaction and relationship between their members in view of their common historical backgrounds and geographical similarities. IEM and IES took turns to host the convention. In 1976, while preparing for the 3rd IEM/IES Convention, it was suggested that all other ASEAN countries should be invited. In 1980, an agreement was signed for the formal establishment of the ASEAN Federation of Engineering Organisation (AFEO) on 8th August 1982. AFEO is a non-governmental body affiliated with the ASEAN Secretariat. It is an organisation of the national engineering/technological institutions of the ten ASEAN member countries, including Brunei Darussalam, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam. Its members are the national institutions/organisations of engineers of the ASEAN countries.

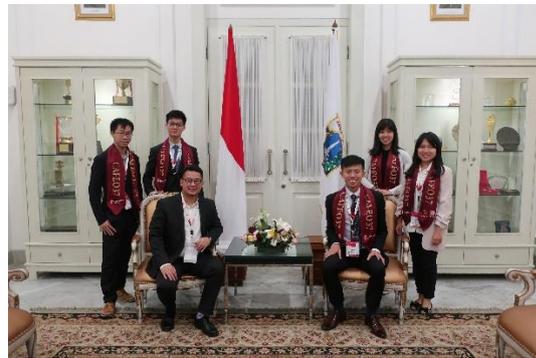
The Conference of ASEAN Federation of Engineering Organisation (CAFEO) has been hosted annually by the different member institutions in a rotating order since 1982. CAFEO annually attracted more than 200 foreign and 300 local engineering professionals from various industries, fields and sectors. CAFEO 37, hosted by the Persatuan Insinyur Indonesia, was held in Jakarta in September 2019.

AFEO also looked after the interest of young engineers. In 1993, the committee of young engineers was established and, in 1994, the Bylaws of the formation of a young engineer group were approved and the definition of the Young Engineer was agreed. The group name was Young Engineers of ASEAN Federation of Engineering Organisations (YEAFEO). Its mission is to be a dynamic and progressive organisation that contributes to the development of young engineers in the ASEAN region. YEAFEO represents the young engineers of the national engineering organisations under AFEO, comprising members engaged in the common professional interest of engineering. It promotes the importance of engineering on the advancement of the social, economic and industrial development of the ASEAN region; concert in the effort to elevate and improve the quality of life of the ASEAN people's dynamic actions and productivity to increase employment opportunities and equitable distribution of wealth among the masses of the ASEAN nations; participates actively in the industrial and technological programmes in ASEAN nations; encourages exchanging and sharing of engineering technology; emphasises on basic professional right, cognisant of the need to establish harmony and relationship among the members.

CAFEO 37 has set the theme "The Beacon of Sustainable Development" for the conference and participants discussed pertinent issues and trends that contribute to the Sustainable Development Goals (SDGs) in the region, focusing on connectivity, equitability and prosperity. Key topics included transportation & logistics, information & telecommunication, education & capacity building, sustainable cities & power and electrical & renewable energy.

This year, five delegates, namely Mr Thomas LAM Chun Ho (Honorary Secretary), Mr CHEUNG Tin King (Committee Member), Ms Evelyn WAI Yi Kwan (Committee Member), Mr Mark WONG Siu Chun (Committee Member) and Ms Keiko KAM Wing Sum (Event Coordinator), represented

the Young Members Committee of the Hong Kong Institution of Engineers (HKIE-YMC) to attend CAFEO 37 and YEAFEO 26.



1.2 Objectives

The objectives of HKIE-YMC attending CAFEO 37 and YEAFEO 26 included:

- To broaden horizons in the engineering profession through sharing with young engineers from other countries;
- To enhance career perspectives of the young members;
- To gain exposure to large scale international conferences;
- To nurture the leadership and communication skills of younger generations;
- To gain knowledge in the current practice of other countries;
- To exchange technical knowledge/ideas/culture with engineers worldwide;
- To expand the network of our young engineers with participants from other countries;
- To promote the HKIE and the HKIE-YMC to other countries; and
- To establish long-term partnership with young engineers from other countries.

2. YEAFEO Meeting

2.1 Country Report

In the country report, each institution provided a brief introduction of their organisations, activities held in the last session and the upcoming events in their year plans. With the theme of “The Beacon for Sustainable Development”, country representatives from each institution also presented the major challenges in their countries, the corresponding strategies and engineering solutions to tackle the issues, in relation to topics such as energy, transportation, telecommunication, industry and infrastructure.

Being a country with more than seventeen thousand islands, Indonesia faced major challenges in mobility and connectivity among islands. New roads, bridges and railroads were under development. The Indonesians were also constructing more groundwater wells in 27 provinces to resolve water shortage problems. Besides engineering challenges, the host country also presented their past activity calendar, including the Indonesia Building Technology Expo 2019, where industry leaders shared innovative technologies in the market. The HKIE-YMC delegates gained more understanding of other engineering organisations in the ASEAN regions and more new ideas of activities for members’ benefits.



For Hong Kong, Mr Thomas LAM, Honorary Secretary of the HKIE-YMC, started with an introduction of the HKIE and the HKIE-YMC and the major events organised in the previous session, such as the International Young Engineers Exchange (IYEE) and various delegations. Other delegates

echoed CAFEO 37's theme and provided an overview of Hong Kong's current status on some of the major topics. Mr Mark WONG explained how Hong Kong's connectivity was enhanced through meticulous transport planning, such as the inclusion of cross-boundary connections in the strategic road network and railway network, and the undergoing expansion of Hong Kong International Airport. Ms Evelyn WAI then shared the flood risks in Hong Kong, and how the city embraced the concept of blue-green infrastructure and built sustainable drainage systems to tackle the issues despite the limitations posed by the congested urban space in Hong Kong.

Mr Thomas LAM concluded with a note of appreciation to the host country for their invitation and arrangements.

2.2 YEAFEO Governing Board Meeting

Delegates were invited to attend the Governing Board Meeting as observers to understand the functions of the Board and the co-operation among YEAFEO member organisations. The Board discussed YEAFEO regulation amendment, newsletter publications, webpage update, YEAFEO registration fee in the coming years and the appointment of YEAFEO office bearers. The Board also announced that CAFEO 38 and YEAFEO 27 would be hosted by Vietnam Union of Science and Technology Associations in Danang City in November or December 2020.



3. Sustainability Forum

3.1 Energy

A sustainability forum was held after the country report. One of the sections focused on the opportunities and challenges for sustainable energy supply in Indonesia. Mr Ali Mundakir, the President Director of Pertamina Geothermal Energy, first introduced the current energy supply and demand in Indonesia. He mentioned that with an installed capacity of 60GW for 250 million people in Indonesia, the electricity consumption per capita was only 980kWh, which limited the economic growth in this country. He then stated that there was a high demand for green energy in Indonesia and an ambitious target was set to increase the fuel mix of renewable energy from 12% to 23% by 2025. This target would be mainly achieved with the increased use of geothermal energy.

Indonesia is geographically located in the volcanic belt, the “ring of fire”, and thus has a high geothermal potential. It was estimated that Indonesia had the biggest geothermal source in the world with a potential of 28 GW. The country planned to increase the geothermal generation capacity from 1.4GW in 2015 to 7.2GW in 2025. Geothermal Energy is an environmentally friendly resource with low carbon footprint and thus less impact on the surrounding areas. Having been operated in Indonesia for more than three decades, it was proven to provide stable performance with high availability in part load or base load.

3.2 LinkAja

Like elsewhere on the globe, Indonesia had embraced digital payments in recent years. As Danu Wicaksana, CEO of the state-owned e-wallet platform LinkAja stated, Indonesia perceived e-payment as a means to accelerate financial inclusion, giving its citizens better access to funds and provide financial cushion for the country.

As of 2019, only 49% of the adult population had bank accounts in Indonesia, and it was imperative for the country’s financial institutes to extend their

reach. Quoting Kenya's experience, Mr Wicaksana explained that digital payments usually enjoyed exponential growth as opposed to the linear growth experienced by card payments. This was why Indonesia had gone digital instead of opening more bank branches to reach its people.

Apart from retail services, LinkAja also expanded its business to the transportation sector, and was looking to operate a remittance business to help migrant workers to send money back to their families in Indonesia. When questioned why the business of e-payment platforms was so diversified, Mr Wicaksana stated that financial analytics, rather than the payment service itself, were the cash-cows of FinTech companies. In Southeast Asia, the rural population borrowed money from village-level lenders, and were often charged high interest rates. Through the usage of e-wallets, citizens could build up their financial profiles and apply for loans at reasonable rates to finance their investments. While the digital transformation was underway, Mr Wicaksana also stressed the importance of establishing a robust legal framework to prevent misuse of personal data.



4. Technical Visits

4.1 Cimanggis – Cibitung Toll Road

To ease traffic congestion in the Greater Jakarta Area, the Indonesian government invested heavily in highway projects in the region. One of the ongoing projects was the 26 km-long Cimanggis – Cibitung Toll Road, a section of the 110 km-long Jakarta Outer Ring Road 2 (JORR 2).

Constructing elevated highways in Jakarta was challenging as viaducts were often constructed above existing transport corridors. With conventional construction technology, road closures would be required to facilitate the construction of bridge piers, causing inconvenience to the neighbouring community. Taking inspiration from his experience when servicing his car in the garage, Indonesian engineer Tjokorda Raka Sukawati realised the possibility of rotating heavy objects by eliminating friction on the contact surface. With this in mind, he went on to invent the Sosrobahu (*‘a thousand shoulders’*), a bridge pier construction technique that allowed pier heads to be constructed parallel to the existing road before being lifted by oil-filled hydraulic jacks and rotated in place.



The Sosrobahu was first applied in the 1980s and was instrumental in delivering Jakarta’s Inner Ring Road on time. Following this success, Mr Tjokorda’s invention continued to play a prominent role in delivering not only Indonesia’s infrastructure projects, but also projects in ASEAN countries, such as the Metro Manila Skyway in the Philippines and the Kuala Lumpur Middle Ring Road II in Malaysia.

Having been introduced to the Sosrobahu technology by the Contractor, Waskita, delegates were given the opportunity to witness the hour-long pier head rotation process on-site. With a target completion by 2020, it was envisioned that the Cimaggis – Cibitung Toll Road could bring relief to the existing toll routes in the Indonesian capital.

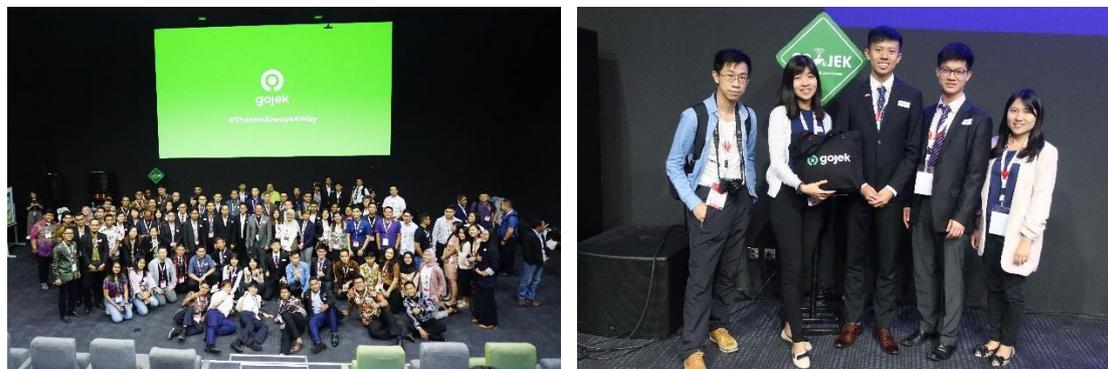
4.2 Gojek

Gojek is a technology company in Indonesia focused on multi-service platform and digital payment. It launched an application that combined data, technology, logistics and payment to provide convenience to customers, drivers and merchants in South-east Asia.

In the visit, the staff first shared the history and core values of Gojek, followed by the data analytics concept and technique for their Super App. The presentation also covered examples of data science flows for driver allocation in Goride / Gocar, as well as grocery suggestion and selection for GoFood / GoBuy / GoShop. Taking the former as an example, the driver allocation system harnessed machine learning and real-time features to optimise user experiences. Instead of usual methods such as decision trees, a self-made allocation system was built. Simple features such as geographical location, traffic conditions and driver ratings were put into the system, so that the decision making by algorithm could be kept fast and unbiased. Gojek had also taken a further step to predict the frequent points of interests for the demand management of Goride / Gocar with big data processing. Language modelling was used to facilitate more precise location sharing between customers and drivers. Taking advantage of the historical data, frequently selected pick up locations such as entrances or gates of buildings were set in the application for various points of interest.

With their belief of offering fast, innovative services and social impact, they were included in Fortune's 50 Companies That Changed the World in 2017 and 2019, ranking at 17th and 11th respectively. Not only does Gojek brings convenience to citizens, it also creates job opportunities, turning individuals to entrepreneurs providing goods and services.

Further to the presentation, the staff showed us the open office with colourful cupboards and little partitions, enhancing staff interaction and discussion. There were rooms for staff to GoPlay and GoGym! Our delegates were more than happy to have a try on the facilities.



4.3 MRT Jakarta

A presentation by representatives of Mass Rapid Transit (MRT) Jakarta was conducted at their headquarters. The MRT Jakarta project was launched to resolve the serious traffic congestion problem in Jakarta, thus improving the citizens' mobility and quality of life. The project was divided into 2 sections: the North-South Section (Phase 1 opened to revenue service in March 2019 and Phase 2 was under construction) and the East-West Section (in pre-feasibility study stage). Phase 1 of the North-South Section was 16km long, with both underground and elevated sections. Sixteen 6-car train sets using the Communications-based Train Control Moving Block System manufactured by Nippon Sharyo were acquired from Japan to run the system.

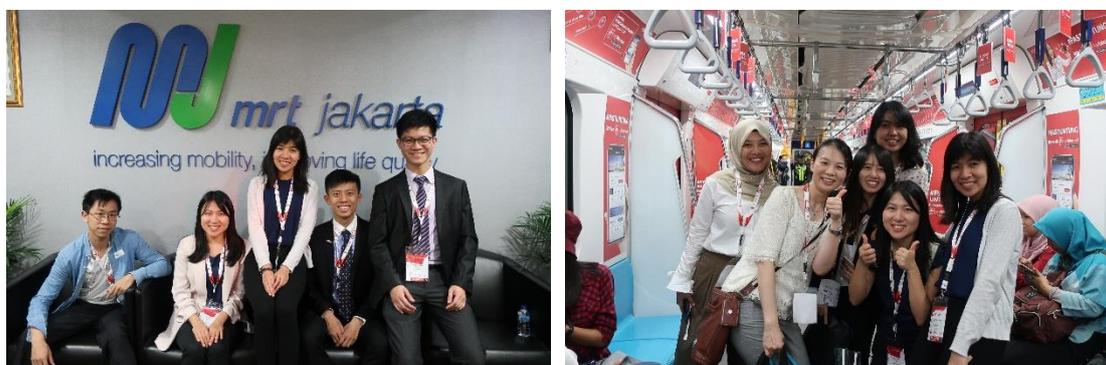
To reach a world-class standard, the representatives shared their experience in their benchmarking exercise. They looked to JR East of Japan for operation and maintenance, and MTRCL of Hong Kong for the 'rail plus property' business model and staff training (MTR Academy).

The representatives then explained the flood prevention measures adopted in the design of underground MRT stations. They stations were designed and constructed above the road level and furnished with sump pits.

To promote inter-modal transport, special pick up services could be arranged by MRT Jakarta on ride-hailing platforms such as Grab and Gojek. This eases traffic congestions and allows passengers to have a more convenient journey.

Efforts were also made to transform the Dukuh Atas Area into a transit-oriented development (TOD), which shifted the previously congested road to a pedestrian area with retail and cultural entertainment. Traversed by various modes of public transportation, including MRT Jakarta, the airport railway, TransJakarta buses, Dukuh Atas was transformed into a leisure hub with good transport connections. With reliable rail services, MRT Jakarta hoped to become the backbone of Jakarta's public transportation network and help in encouraging the use of public transport and driving the city into a new era.

The visit ended with a ride on MRT Jakarta, where delegates appreciated the comfort and women-friendliness (women only compartment was provided on each train) of the ride.



4.4 Ministry of Public Works and Public Housing

Infrastructure was a top priority in the Jokowi administration as the Indonesian government strived to bring connectivity, equitability and prosperity to the country. In recent years, the archipelago had seen strong investment in infrastructure projects such as the One Million Houses Program and the MRT Jarkarta. These projects were overseen by the Ministry of Public Works and Public Housing (PWPH), which also played a

key role in formulating policies to guide the country towards sustainable development.

At the tea gathering hosted by the PWPH, Dr Basuki Hadimuljono, Minister of PWPH, promoted lean construction in infrastructure projects. Apart from controlling costs and delivering projects on time, the Minister encouraged young engineers to adopt a holistic approach in project delivery, and highlighted the significance of identifying client values in the early stage. The Ministry also led the way in promoting green buildings, as it turned its office complex in South Jakarta into a leading example. The PWPH complex was the first government building to apply a green concept and receive platinum certification from the Green Building Council Indonesia (GBCI). To integrate further with the neighbouring community, the Ministry sought to create a better environment for street food vendors near the government complex, and launched an in-house competition amongst graduate architects working for the Ministry. Winners of the competition were given the opportunity to share their designs, and the minister promised to bring the winning design to reality in the coming years, signifying his support in providing a nurturing environment for future leaders.



4.5 Menara Astra

Menara Astra is a skyscraper in Jakarta. The 50-storey building has a height of 261m and occupies 1.1ha land, with a leasable area of 73,000m². With its environmentally sustainable design and green features, Menara Astra was the first building in Indonesia to receive Green Mark Platinum

certification from the Building and Construction Authority (BCA) of Singapore. The key features of the building included various high performance systems, such as façade system, heating, ventilation, and air conditioning (HVAC) system, lighting system and rainwater harvesting system.

The project was designed with a façade system which reduced the solar beam getting into the space. As an international grade A office building, it had a sleek design with a fully glazed system into the façade, thus having a high window to wall ratio. It reduced energy by using a spandrel wall system together with high performance glass that having shading coefficient of 0.25. The podium level was designed with transparent glass for the showroom while compensating with a combination of high performance glass on the façade configuration.

Compared to the traditional commercial air heating unit and ductwork system selection, the air side pressure drops through the system and thus the air velocity throughput was lowered. This minimised the overall system pressure drop by reduced air velocity across the air filter, the cooling coil and the fan and increased the efficiency.



This project used energy efficient compact fluorescent lamps with high frequency ballasts and LED lighting for most of the light fittings. The façade was designed with a high window opening, allowing natural daylight to be introduced. To lower electric energy consumption, light fittings at lobbies

were timer-controlled and designed to meet the minimum required lux level for the comfort and safety of occupants.

The rainwater harvesting system was installed to reduce the use of portable water for landscape irrigation. Grey water generated by the building would be collected and stored in a recycling water tank, where it would be treated and recycled for landscape irrigation and toilet flushing. With this, water consumption of the building could be reduced.

5. Networking

5.1 Welcoming Dinner and Performance

The welcoming dinner was held at the Mercure Hotel on the first night to commemorate the beginning of CAFEO 37 and YEAFEO 26.

The climax of the night was the cultural performances by different countries at the end of the dinner. They took turns to go on the stage to give cultural performances such as folk music, dance and drama to show their passion and send their warmest regards to CAFEO, YEAFEO and all the participants. In particular, the Hong Kong delegates performed the Cantonese song Boundless Oceans, Vast Skies (海闊天空). With the moving melody, delegates from other countries joined the Hong Kong delegates at the stage to enjoy the performance, while guests down stage showed their support with the spotlight in their smartphones. They celebrated the long-term relationships between Hong Kong and ASEAN countries with the participation of CAFEO and YEAFEO conferences in the previous years.



5.2 Meeting with Governor of Jakarta

The delegates were honoured to meet with Mr Anies Baswedan, the Governor of Jakarta in a banquet. The Governor appreciated the unity of ASEAN and East Asian regions and highlighted the importance of collaboration among the regions, including government to government,

business to business and people to people, in striving for innovation and technological breakthroughs to enhance the development of the world.

He also shared the challenges of traffic congestion in Jakarta and the government initiatives to limit private vehicles and improve public transportation, which made Jakarta become the city with the world biggest improvement in traffic congestion in 2018. He expected the traffic pressures would further be alleviated with the first mass rapid transit line opened in March 2019 and the light rail system to be commissioned in the near future.



5.3 Closing Ceremony

The closing ceremony was held at Jakarta International Expo on 13 September 2019 to mark the official end of CAFEO 37 and YEAFEO 26. A number of ASEAN Engineering Achievement Awards were presented. The President of CAFEO 37 delivered a closing speech and handed over the CAFEO flag to Vietnam, the host of CAFEO 38. The ceremony ended with a traditional dance which many delegates joined in as a unity. This was a memorable night for all of the delegates from different places and countries.



5.4 Souvenirs Exchange

One of the highlights in YEAFEO was the souvenir exchange session. The delegates of each participating organisation prepared souvenir packs that could best represent their regions for exchange. As the Mid-Autumn Festival was approaching, the Hong Kong delegates prepared lanterns to symbolise the reunion of the young engineers family and share the festive joy with them. They also prepared a pack of snacks including Hong Kong style milk tea, Crispy Roller Coaster (薯圈) and Flavored Beef Crunchies (牛仔片) for other delegates to enjoy Hong Kong style tea time.



5.5 Visit to One Thousand Island

Apart from urban megapolitan life with all the modernity, Jakarta has a renowned natural and exotic marine tourism destination. Seribu Islands are located in the north of the Coast of Jakarta, providing vast blue exotic and pristine ocean Island. “Kepulauan Seribu”, in English the thousand islands, is a name given to the scatted tropical islands in the bay of Jakarta. There are 110 islands, with 20,000 residents live on 11 islands only. Most of the other islands are either restricted nature sanctuaries, privately owned or uninhabited. They are famous for water sports and heavens for diving. Besides tourists, local people also love to have fun under the sun on those islands during holidays.

The delegates went to the Bidadari Island. Bidadari means Angel in Indonesian language. It was close to the Jakarta port, with only 20 minutes’ drive by speedboat. The island had stunning beach view. The delegates sat on the seashore and enjoyed the nuance in the shoreline, seeing the vessels

go back and forth, feeling relaxed in the breezy wind. The beach there displayed smooth white sand and crystal-clear sea water. The delegates had their tea there and enjoyed the sunset.



6. Conclusion

Delegates from HKIE-YMC have fulfilled the following objectives when participating in the CAFEO 37 and the YEAFEO 26:

- To gain exposure to large scale international conference;
- To nurture the leadership and communication tactics of younger generations;
- To gain knowledge on the current practice of other countries;
- To broaden knowledge through sharing with young engineers from other countries;
- To exchange technical knowledge/ideas/culture with engineers worldwide;
- To extend the network of our young engineers with delegates from other countries;
- To increase the horizon of young engineers through their participation; and
- To promote the HKIE and the HKIE-YMC to other countries.

The initiative of the participation of CAFEO 37 and YEAFEO 26 of HKIE-YMC was in line with the President in his HKIE Presidential Address 2019/2020 and his goals to nurture young engineers, facilitate exchange of knowledge and ideas, and expand members' horizons. In the past few years, delegates from the HKIE-YMC attended the conference as guests and observers.

The CAFEO 37 and YEAFEO 26 this year was a valuable experience for professional engineers, especially young engineers. The five HKIE-YMC delegates have gained exposure to attending large scale international conference, increased their engineering knowledge, improved communication skills and developed inter-personal qualities to work with engineers of different countries. Furthermore, it has broadened the delegates' world view and understanding of global interconnectivity. After years of active participation at YEAFEO, it has been suggested that HKIE-

YMC could utilise the network and the experience to host a similar international young engineers exchange activity in Hong Kong to strengthen the bonds between engineering societies and raise the awareness of our local engineers on global issues. Next year, CAFEO 38 and YEAFEO 27 will be held in Vietnam. The HKIE-YMC will continue to encourage more young engineers to attend this meaningful event.



7. Feedback

Mr Thomas LAM Chun Ho (Honorary Secretary)



International exposure and exchange are important for engineers to explore their mind and gain global views on the engineering profession. Echoing the President's theme of "Knowledge Transfer · Our Commitment for the Future", the CAFEO 37 and YEAFEO 26 in Jakarta was an eye-opening experience for our delegates to gain insights and exchange knowledge and ideas with ASEAN engineers who strived for a common goal - sustainable development.

We shared and learnt about the engineering challenges and solutions in different regions in enhancing connectivity, prosperity and equitability, and witnessed the convenience and comfort in Jakarta brought by its infrastructure and digital technology. More than the technical aspect, the delegation provided a platform for YMC to maintain close relationship with other engineering institutions. I look forward to our partnership and collaboration in the future, working together to sustain excellence in the engineering profession.

Mr CHEUNG Tin King (Committee Member)



This year was my second time to participate in the CAFEO and YEAFEO. I was glad to have the chance to join the event again as a delegate and it really impressed me a lot.

The CAFEO and YEAFEO trip was full of insight. We learned about the events organised by other engineering organisations last year and the development of our neighbourhood countries. The technical visits and seminars gave us a deeper understanding of Indonesia. Gojek gave us a good example of how a developing country could nurture a start-up company that could be as competitive as international companies like Uber. Besides, throughout the discussion with local people, I gained a deeper understanding on the importance of sustainable development and the reasons why the Indonesia needed to move their capital from Jakarta.

Another exciting part of the delegation was getting in touch with the CAFEO and YEAFEO delegates. I was glad to reunite with some old friends and meet some new faces. Sharing the similar age and background, we got close easily and built up friendship quickly. Especially, I would like to thank the delegates from the host country, Indonesia, who arranged all the activities for us, brought us to taste their local food and visit their landmark building and tried their best to look after all the delegates well.

All in all, the CAFEO and YEAFEO was a good platform for young engineers of different countries to learn valuable experience from each other. I was pleased to have this valuable learning experience and would like to

thank the HKIE for the support. More young engineers should be encouraged to participate in this kind of conferences.

Ms Evelyn WAI Yi Kwan (Committee Member)



This trip was really inspiring and fruitful. From the opening speech of CAFEO, I saw the unity of ASEAN countries, such as how they found opportunities for better development among their countries, despite the challenging environment around the world. From the technical visits to Gojek, MRT, Cibitung Toll Road etc., besides getting to know more about the innovative technologies and methods the companies adopted in their projects, I was admired on their determination on improving peoples' lives in Jakarta. They understood their current problems and were striving through different ways to make Jakarta a better city. It reminded me on my duty as an engineer - to shape a better world. I was also very glad to meet new friends from different countries. I will treasure our memories of the singing and dancing together! I do hope we can have more chances to network with each other in the near future!

Mr Mark WONG Siu Chun (Committee Member)



Participating in CAFEO 37 and YEAFEO 26 was a rewarding experience for me. During our week-long stay in Jakarta, I was able to gain insights into the recent development of Southeast Asian economies, and forge friendships with delegates from all corners of the region.

Throughout our visit, we witnessed Indonesia's strong investment in its transport infrastructure. From the recent opening of its metro line to the construction of the second outer ring road, Jakarta has been improving its connectivity, and the enhanced transport network will be a strong foundation for growth in the coming years. Seeing the 'Sosrobahu' pier head rotation technology in action was a highlight of the week, and the rise of Gojek, Indonesia's answer to Uber, was a testament to the success of the on-demand business model.

While digital payment platforms in Hong Kong were established to provide greater convenience to consumers, ASEAN countries were digitising their financial industries to enhance financial inclusion within the region. It was interesting to learn that the rural population were building up their financial credibility through the usage of e-wallets, and how digital payment platforms in Hong Kong can cooperate with their counterparts in Southeast Asia to help domestic workers in remitting their hard-earned money back to their relatives at home.

Aside from technical visits and country reports, I also enjoyed the excursions arranged by our hosts and the great company of our fellow delegates. I am certain that CAFEO 37 and YEAFEO 26 is only the

beginning of many beautiful friendships, and it will be a pleasure to discover another part of Southeast Asia with them in the future.

Ms Keiko KAM Wing Sum (Event Coordinator)



CAFEO 37 and YEAFEO 26 was definitely an eye-opening experience for first-time participants like me. Not only did this event allow young engineers of neighbouring countries to gather and voice out for the betterment of the engineering society, the technical visits also allowed delegates to get in touch with the recent development of ASEAN countries in various engineering fields. It was certainly unforgettable to attend technical visit session at midnight, staying outdoors watching the section of bridge turn with the aid of Sosrobahu. Special thanks to the organising committee of the CAFEO 37 and YEAFEO 26 for their preparation of the logistics and the fruitful 4-day programme. It is always sweet to meet young engineers of different backgrounds, sharing similar culture and tone. Interactions with other delegates are like little sparks lighting up the passion to continue to serve the engineering community. Let us pass the ripples of love back to Hong Kong to learn and serve. I look forward to meeting the old and new faces in CAFEO 38 and YEAFEO 27!

Appendix A

CAFEO 37 / YEAFEO 26 – Jakarta at a glance

CAFEO 37 / YEAFEO 26 – Jakarta at a Glance



1. **JIEXPO**
➤ Conference, meetings and formal dinner



2. **Grand Mercure Jakarta Kemayoran**
➤ Welcome dinner



3. **Jakarta City Hall**
➤ Meeting with the Governor of Jakarta



4. **Cimanggis – Cibitung Toll Road**
➤ Part of Jakarta's 2nd outer ring road
➤ 'Sosrobahu' pierhead rotation technology



5. **Gojek**
➤ Indonesia's on-demand service and digital payment platform
➤ 1st decacorn company in Indonesia



6. **MRT Jakarta**
➤ Jakarta's first metro line
➤ Opened in March 2019



7. **Ministry of Public Works and Housing**
➤ Meeting with the Minister of Public Works and Housing



HKIE THE HONG KONG
INSTITUTION OF ENGINEERS
香港工程師學會

Young Members Committee
青年會員事務委員會

9. **Bidadari Island**
➤ Part of the Thousand Islands, a popular tourist destination off the coast of Jakarta



8. **Menara Astra (Astra Tower)**
➤ 261 m tall skyscraper with BCA Green Mark Platinum certification (provisional)



Appendix B

Conference Programme



CAFEEO37

INDONESIA



ASEAN Engineers as The Beacon of Sustainable Development



11 - 14 September 2019
Jakarta International Expo, Jakarta - Indonesia

www.cafeo37.id



CAFE037

INDONESIA

CAFE037 Indonesia is a celebration of ASEAN engineers as the beacon of sustainable development. ASEAN engineers contribute significantly to the effort of achieving ASEAN Sustainable Development Goals (SDG) through building & enhancing connectivity and enabling equitability & prosperity.

ASEAN Engineers as The Beacon of Sustainable Development

ENGINEERING FOR SUSTAINABLE DEVELOPMENT CONFERENCE

Engineering plays a key role in designing & building infrastructure and new methods of connectivity; developing solutions that achieves equitability of resources; and creating innovation to enable sustainable development and financial growth. This inaugural conference will bring together engineering academia, specialists and practitioners across the region and beyond to share knowledge and ideas thereby facilitating the creation of a common vision for enhancement of connectivity, improved equitability and foster greater prosperity within ASEAN region.

INDONESIAN ENGINEERING EXHIBITION

Exhibition showcasing latest Indonesian development leveraging engineering expertise from infrastructure to digital solutions; in response to the specific challenges of physical infrastructure needs and balanced growth opportunities.

ELECTRICAL, POWER, & RENEWABLE ENERGY EXHIBITION

The 19th Edition of this event; showcase resources, ideas, cutting-edge electrical and power machinery, equipment and technology; including latest wind and solar power systems, thermal, hydropower, biomass, and innovative financing solutions crucial for power infrastructure development in Indonesia

Time	Day-1 Wed, 11 Sep		Day-2 Thu, 12 Sep			Day-3 Fri, 13 Sep			Day-4 Sat, 14 Sep			
08:30 – 09:30	Working Group & Committee Meetings	Indonesia Engineering Exhibition	Electrical, Power & Renewable Energy Exhibition	Opening Ceremony			Country Reports	Engineering for Sustainable Dev. Conference	Indonesia Engineering Exhibition	Electrical, Power & Renewable Energy Exhibition	Technical and Cultural Visit	
09:30 – 10:00	Break			Break	Break							
10:00 – 12:00	Working Group & Committee Meetings			Engineering for Sustainability Development Conference	Indonesia Engineering Exhibition	Electrical, Power & Renewable Energy Exhibition	FEIAP EXCO Meeting	Engineering for Sustainable Dev. Conference				
12:00 – 13:00	Lunch/Prayers			Lunch/Prayers			Lunch/Prayers					
13:00 – 15:00	Working Group & Committee Meetings			AER Certificate Presentation			Engineering for Sustainable Dev. Conference	AFEO Governing Board Meeting				Engineering for Sustainable Dev. Conference
15:00 – 15:30	Break			Break								
15:00 – 17:30	Working Group & Committee Meetings			AER Certificate Presentation			Engineering for Sustainable Dev. Conference	Signing of Jakarta Declaration				Engineering for Sustainable Dev. Conference
Evening	Welcome Reception			Free & Easy			Closing Banquet					





CAFE037
INDONESIA

VENUE
Jakarta International Expo, Jakarta – Indonesia
New Convention Center & Theatre





CAFEO37 INDONESIA

No.	HOTEL NAME	Stars	Availability on Venue Dates	Distance (From JIExpo)
1	GRAND MERCURE	5	✓	670 m
2	HOLIDAY INN	4	✓	3,200 m
3	GRAND ORCHARDZ HOTEL	4	✓	840 m
4	BEST WESTERN+ HOTEL	4	✓	1,500 m
5	SWISS-BELINN	3	✓	440 m
6	GRAND G7 HOTEL	3	✓	1,340 m
7	GRAND PALACE APT.	3	✓	680 m

* *Non-exhaustive list*

NEARBY HOTELS





ATTRACTION AROUND THE VENUE

City Sightseeing	
Cultural & History	<ul style="list-style-type: none"> • Jakarta Old Town • Sunda Kelapa Harbour • Rumah Si Pitung
Landmarks	<ul style="list-style-type: none"> • Monumen Pancasila • Monumen Nasional
Shopping Trips	<ul style="list-style-type: none"> • Grand Indonesia Mall • Plaza Indonesia • ITC Mangga Dua • Thamrin City
Family Trips	<ul style="list-style-type: none"> • Ancol Dreamland • Waterbom PIK

See you in Jakarta,



CAFFEO37

INDONESIA





CAFEO37

INDONESIA

ASEAN Engineers as The Beacon of Sustainable Development



11 - 14 September 2019
Jakarta International Expo, Jakarta - Indonesia

ISLAND CONNECTIVITY

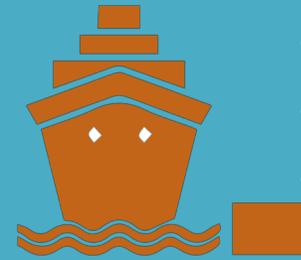
Building and improving mobility and connectivity within, between, and among Indonesia's vast islands



ROAD AND BRIDGES

- 3,432 km new roads completed
- 40 km of new bridges

Mobility & Connectivity in Indonesia's
1.905 mill km land area
17,504 islands

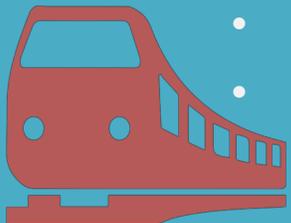


SEAPORTS

- 19 new seaport completed
- 8 new seaport to be completed 2019
- 18% Increase in port handling capacity from 16.7 to 19.7 TEUs

RAILROADS

- 755 km of rail completed or reactivated
- South Sumatra LRT completed
- Jakarta LRT to be completed 2019
- Jakarta MRT to be completed by 2019



AIRPORTS

- 10 new airports in eastern Indonesia
- 408 airports completed in remote and isolated areas



PALAPA RING

Fiber optic infrastructure project as telecommunication backbone to reach all of Indonesia cities and regencies (IKK)

Total cities /regencies (IKK)

514

Total length of network

12.148 km

PALAPA RING – WEST

2.275 km (completed)

149

Sumatra

PALAPA RING – CENTRAL

2.995 km (35% completed)

48

Kalimantan

65

Sulawesi

PALAPA RING – EAST

6.878 km (20% completed)

7

Maluku
Utara

8

Maluku

7

Papua
Barat

5

Papua

118

Jawa

9

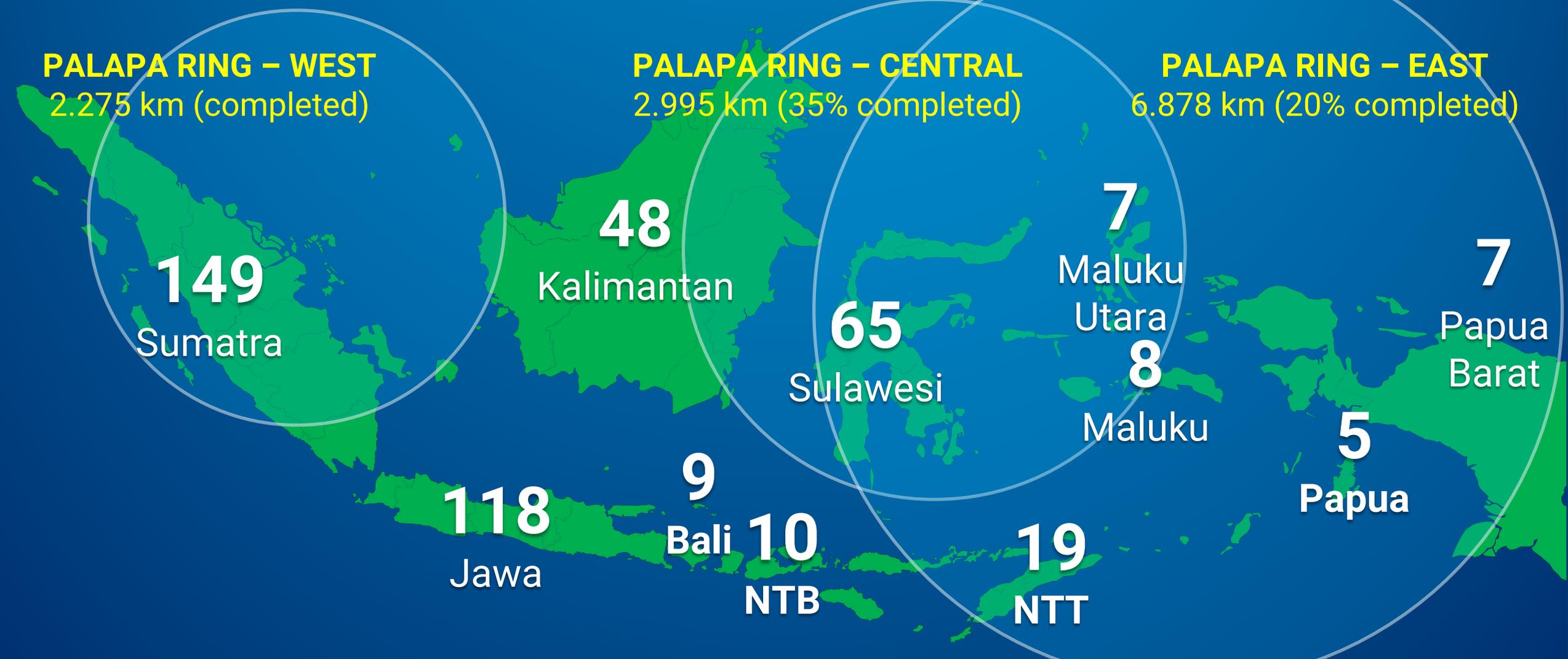
Bali

10

NTB

19

NTT



■ SINGLE FUEL PRICE POLICY PROVIDING AFFORDABLE FUEL PRICE

PREVIOUS FUEL PRICE:

Puncak Regency, Papua	Rp100.000
Nunukan, North Kalimantan	Rp40.000
Arfak Mountains, West Papua	Rp30.000



SINGLE FUEL PRICE

Rp 5.150 | **Rp 6.450**

DIESEL

GASOLINE

SINGLE FUEL PRICE
REALIZATION

57
LOCATIONS
2017

98*
LOCATIONS
2018

* realization up to 2018, include 21 locations of inauguration process



Road Map of Single Fuel Price

● Pertamina ● Private



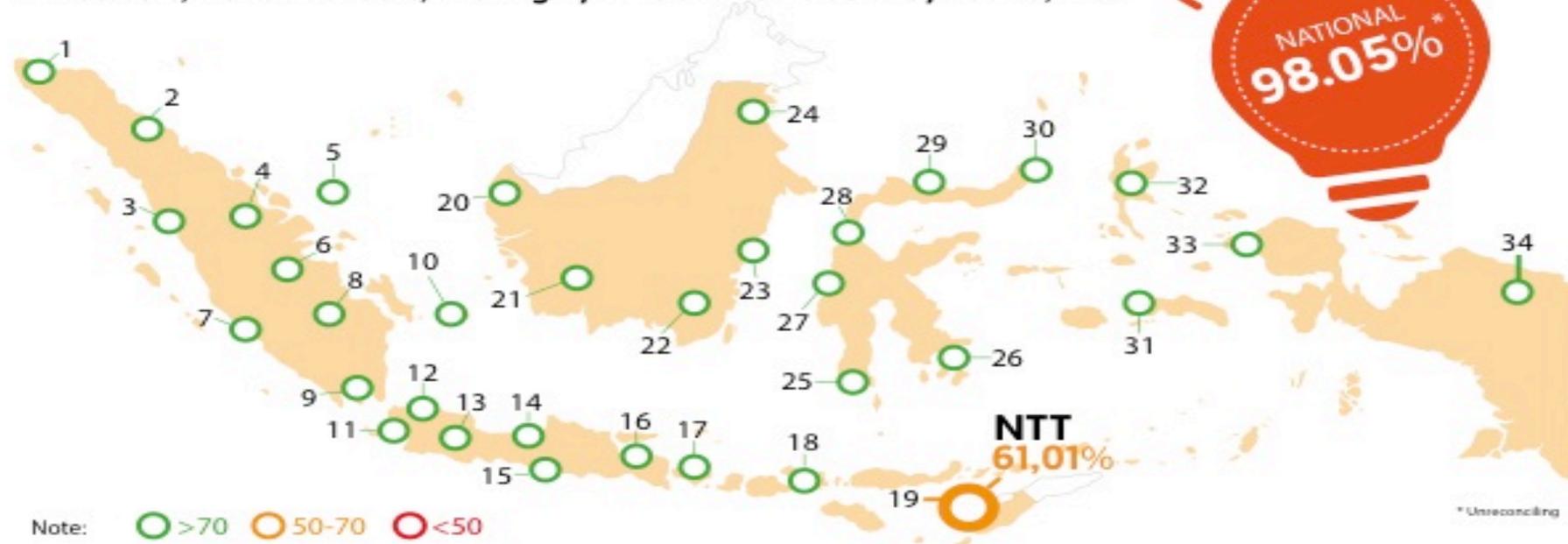
2017
57 locations
● 54 locations ● 3 locations

2018
73 locations
● 67 locations ● 6 locations

2019
30 locations
● 29 locations ● 1 location

ELECTRIFICATION RATIO EXCEEDS TARGET UP TO Q3 2018

The achievement of national electrification ratio has reach 98.05%*
 PLN 95.43%; Non-PLN 2.50%; and Highly-Efficient Home Solar System 0,12%.



SUMATERA		
1 Aceh	98.56	
2 Sumut	99.99	
3 Sumbar	91.60	
4 Riau	98.44	
5 Kepri	88.10	
6 Jambi	96.54	
7 Bengkulu	99.77	
8 Sumsel	90.79	
9 Lampung	94.58	
10 Babel	99.99	

JAWA-BALI-NUSRA		
11 Banten	99.99	
12 Jakarta	99.99	
13 Jabar	99.99	
14 Jateng	98.15	
15 DIY	99.99	
16 Jatim	93.87	
17 Bali	99.99	
18 NTB	88.52	
19 NTT	61.01	

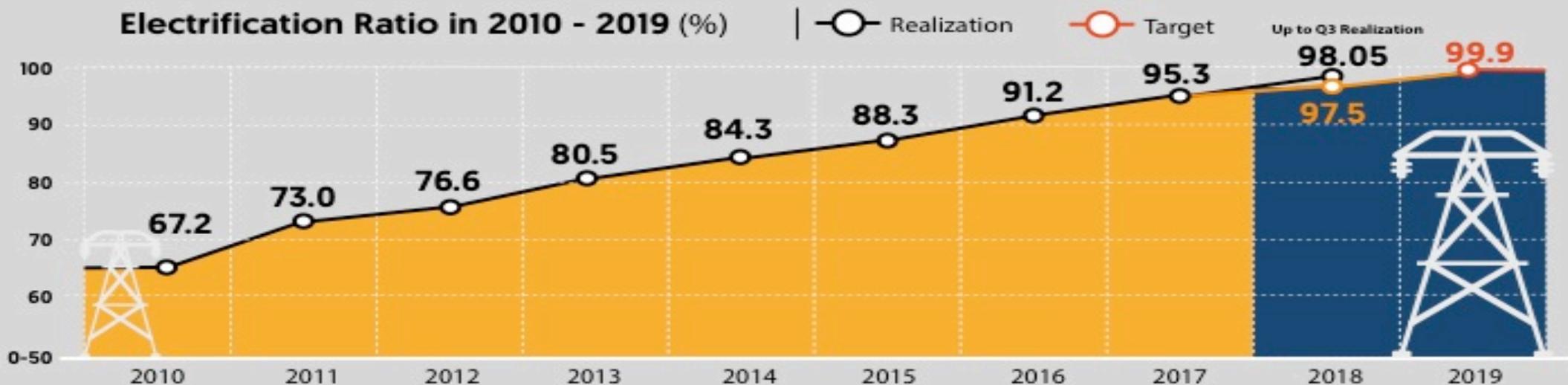
KALIMANTAN		
20 Kalbar	86.66	
21 Kalteng	84.56	
22 Kalsel	94.66	
23 Kaltim	99.99	
24 Kaltara	90.28	

SULAWESI		
25 Sulsel	99.99	
26 Sultra	86.68	
27 Sulbar	99.73	
28 Sulteng	91.54	
29 Gorontalo	88.41	
30 Sulut	97.11	

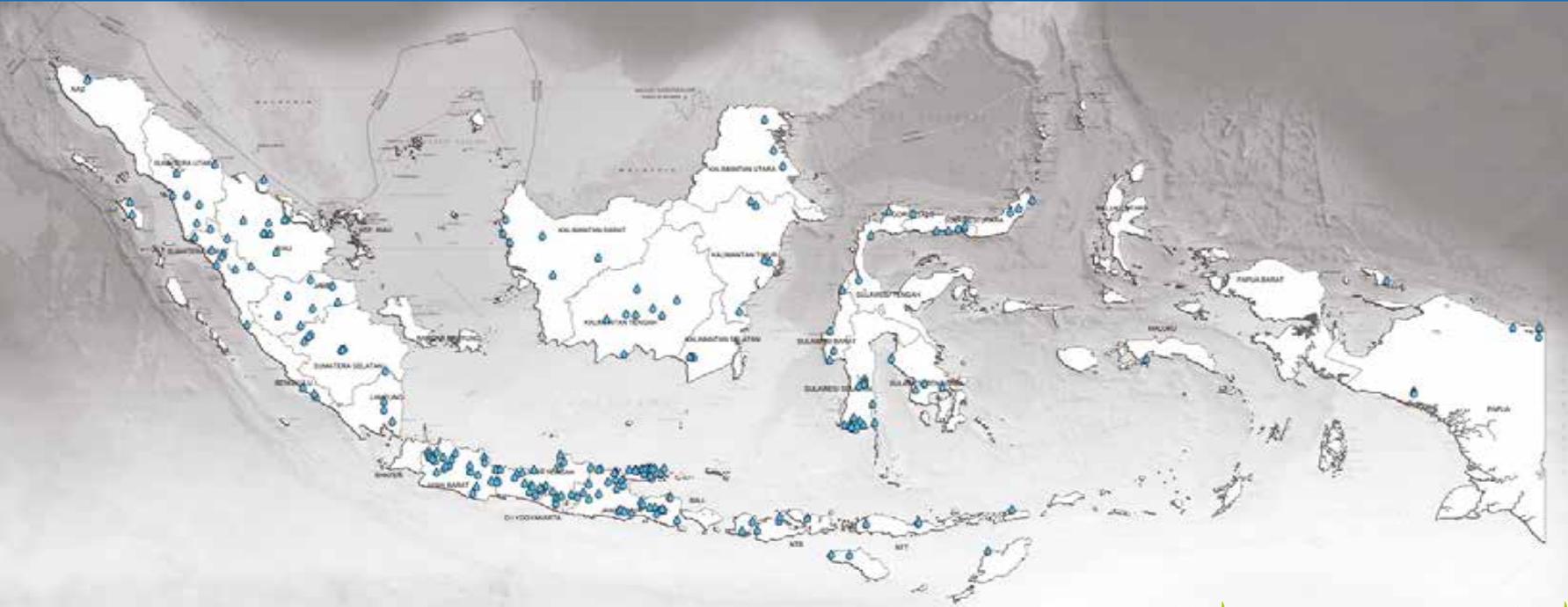
MALUKU & PAPUA		
31 Maluku	89.18	
32 Malut	99.45	
33 Pabar	99.99	
34 Papua	81.66	



Electrification Ratio in 2010 - 2019 (%)



DRILLING WELLS IN WATER-SCARCE AREA



Up to Q3 2018, total of:

2.074

drilling wells
have been constructed

for serving
5.97 Million
lives



2017 Realization

237

groundwater wells
in 27 provinces

2018 Target

550 groundwater
wells

in 27 provinces
[179 Regencies]

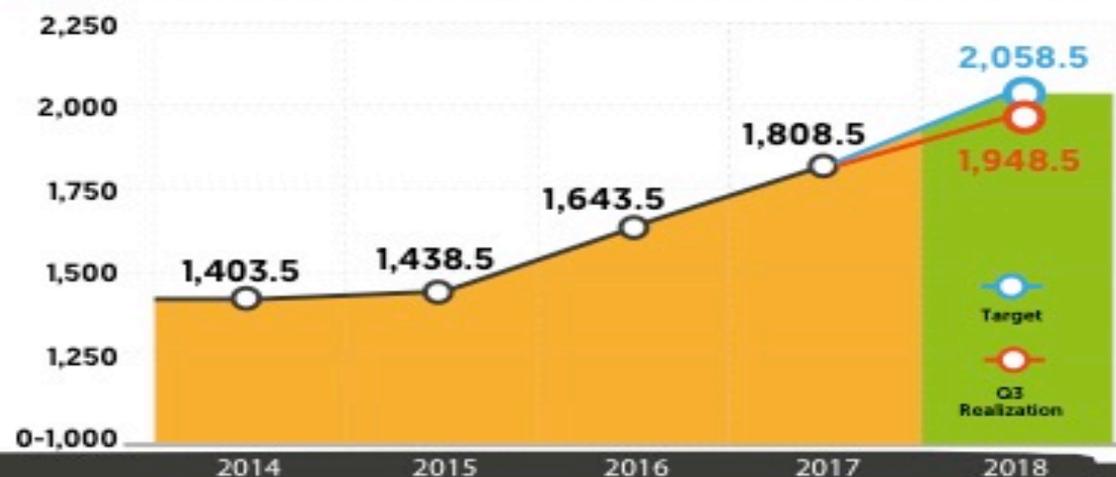
Up to Q3 Realization:

292 groundwater
wells

RENEWABLE ENERGY DEVELOPMENT

UP TO Q3 2018

■ GEOTHERMAL POWER PLANT INSTALLED CAPACITY (MW)



140 MW Geothermal Power Plant additional capacity from Karaha #1 (30 MW) & Sarulla #3 (110 MW)

■ INSTALLED SOLAR, MINIHYDRO/MICROHYDRO & WIND POWER PLANT (MW)

● 2018 Target
● Up to Q3 Realization



■ BIOENERGY POWER PLANT INSTALLED CAPACITY (MW)

Bioenergy Power Plant consisted of Biomass, Biogas, Municipal Waste, and Biofuel. Mostly are off-grid power plant.



INDONESIA DIGITAL JOURNEY:

A growing market will unleash significant socioeconomic impact across the archipelago

JOB CREATION

Impact of online commerce in 2022

26 million jobs supported, primarily at micro, small, and medium enterprises (MSMEs)



SOCIAL EQUALITY

Impact of online commerce in 2018

Up to 35 percent of online revenue is generated by women, compared with 15 percent in offline retail.

Impact of online commerce in 2022



65 million citizens consuming via online commerce, compared with 20 million in 2018

Engineers...

Build infrastructures and new methods of **CONNECTIVITY**

Develop solutions that achieves **EQUITABILITY** of resources

Innovate to enable **PROSPERITY**

The Beacon for Sustainable Development

See you in Jakarta,



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INDONESIA



Appendix C

Financial Report