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ASEAN-EU Economic Cooperation: the Case of COGEN ¹

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1. Introduction

Mr. Pennington is the project manager of the EC-ASEAN Cogen Programme, an EU-ASEAN economic cooperation programme, charged with increasing economic cooperation in biomass energy equipment between the two regions. The project provides support to selected new power plants using European equipment and technology. In the beginning of the programme, there were limited requests for support. In March 1996, however, many projects requested support, exceeding the available budget.

Currently, Mr. Pennington and his team, based in Bangkok, Thailand, have two urgent matters to attend to. First, they need to determine objective criteria for the monitoring of projects. Simultaneously, they have to evaluate their own programme and make suggestions to the European Commission for a possible extension of the programme, which would normally finish at the end of 1996.

2. The COGEN Programme

The COGEN Programme was set up in 1990 as an economic cooperation programme between the European Union and ASEAN, sponsored by the European Commission and coordinated by the Asian Institute of Technology (AIT, Bangkok, Thailand).

The main purpose was to increase the sales of European equipment for biomass energy in the ASEAN market, although other objectives were also important, such as energy cost-savings for the end-user and the promotion of environment-friendly technology and reduction of oil dependence, which was especially important for many ASEAN governments trying to reduce their trade deficit.

The COGEN Programme started initially as a short-term programme, with a contract of less than 1 year. This was extended, however, with other short-term contracts until the end of 1994¹. At the start of the programme, the purpose was mainly to investigate the potential of biomass energy. After conducting several studies revealing a great deal of potential, a new, long-term contract for COGEN (February 1995-January 1997) was approved by the European Commission.

Mr. Pennington, an economist, was hired in 1994 as the project manager of the COGEN secretariat in Bangkok. The COEN-team in Bangkok consisted then of a technical, management and administrative staff of about 10 people. On the European side, two agencies were hired as subcontractors, to keep contact with the European equipment suppliers in the EU. One agency was the Centre de Recherches Agronomiques (CRA) in Gembloux, Belgium, for the more technical aspects, and the other agency was The Enterprise Group, Brussels, Belgium, for the more business and management aspects. Both consultants worked closely together and had to keep contact with the European equipment suppliers. In each ASEAN country (except Brunei), country coordinators, consisting of people from both the private and public sector involved in energy management, environmental technology and industrial de-

¹ The European Commission did not want to commit itself to long term funding before investigating the potential. Moreover, budgets for these short-term contracts were less than 1 million ECU and therefore did not need to be approved by the PVD-ALA (Developing Countries - Asia and Latin American) Committee.

velopment, were assigned to keep close contact with the potential end-users, business partners and policy makers.

The COGEN programme now started a more business-oriented approach with actual selection, implementation and promotion of biomass equipment projects, or FSDPs (Full Scale Demonstration Projects), which used European technology.

The COGEN programme supported these FSDPs in several ways:

- financial support on a case-by-case basis, up to 15 % of the investment cost with a maximum ceiling of 400,000 ECU² per project;
- training in Europe and ASEAN for the plant operators and the local partners in case of joint ventures;
- monitoring and follow-up of the project.

The financial support for the investment projects was allocated by the EC in three phases (Table 1). In 1993, a separate budget was allocated to projects in Thailand only.

A major task for Mr. Pennington and his team was thus to select FSDPs which could be good show-cases for the available European technology.

Table 1: EC contribution to the equipment cost of FSDPs

Year	Amount (ECU) ¹	Allocation
1992	400,000	2 FSDPs in ASEAN
1993	643,821	5 FSDPs only in Thailand
1995/96	2,250,000	remainder in ASEAN
TOTAL	3,293,821	

Source: COGEN, AIT, Bangkok
1 1 ECU \approx 1.35 USD

2.1 Selection of European equipment suppliers

The COGEN team in Bangkok and the consultants in Europe first developed a database of all companies in the EU involved in biomass energy (manufacturers, engineering companies and other institutions). They filed about 1,300 companies. From this total group of companies, a hard-core of companies was selected, which fulfilled several criteria:

- high-quality relevant technology,
- a high interest in the COGEN programme,
- already active in the ASEAN region, with an office or an agent in the ASEAN region and looking for an ASEAN joint venture partner.

Company profiles of these hard core companies were included in the COGEN-directory of environment-friendly energy equipment suppliers in the EU. Relevant parts of this directory were sent to potential end-users.

² 1 ECU is approximately 1.35USD

2.2 ASEAN target groups

On the ASEAN side, the ASEAN country coordinators inventoried the ASEAN target groups like potential ASEAN end-users, possible joint-venture and other strategic business partners (like engineering companies, financial institutions, etc.), policy makers, press, research centres, etc. They listed a total of about 3,000 entries of which a hard core of about 1,500 entries was selected. This core received regular information on the COGEN programme, on the several demonstration projects and other relevant topics, as well as the relevant company profiles of EU suppliers.

2.3 Selection of Full-Scale Demonstration Projects

After identifying both the demand side in the ASEAN region for biomass energy equipment and the supply that could be offered by European manufacturers, Mr. Pennington and his team informed all companies in the databases about the COGEN programme and a call for FSDPs was sent out. Interested companies could return a standard proposal to be signed by both the European equipment supplier and the ASEAN customer. Calls were placed in 1992, 1993 and 1995/96. For all, except for the last one, the budget was large enough to accept all eligible proposals, i.e. technical and environmental viability, submission of complete information (necessary for the screening, no duplication of an existing FSDP, etc.). The last call, however, was very successful and not all projects could be supported.

Table 2 shows the number of COGEN demonstration projects as of May 1996 per country and per sector.

Table 2: COGEN demonstration projects as of May 1996

Sector/Country	Indonesia	Malaysia	Philippines	Singapore	Thailand	TOTAL
Rice					1	1
Sugar						
Palm Oil		1			1	2
Coconut						
Wood	3	6			4	13
TOTAL	3	7			6	16

Source: COGEN, AIT, Bangkok.

2.4 Marketing of the COGEN programme

The FSDPs form the key assets of the COGEN programme. Of course, these can only be useful to promote new European technology suppliers if the marketing measures accompanying them are effective. Several marketing tools were initiated by Mr. Pennington and his team. A strategic information system, called *The COGEN Business Line*, was developed (see Annex 1). It contains all information and activities by COGEN in relation to (biomass) energy and other environmental issues involving European and/or ASEAN companies, institutions and governments.

Specifically, this information system consisted of three databases (see Annex 2 and 3) which are as follows:

- 1) the ASEAN biomass database, containing information on biomass production and milling capacities in ASEAN;

- 2) national and ASEAN databases, containing all relevant information on end-users, business partners, government institutions and other interesting entries. All national databases are updated at the country level and combined at AIT into one ASEAN database;
- 3) the European database, containing all relevant information on European equipment suppliers and other interesting companies and institutions. The hard core of this database is entered into the more extensive Directory of Biomass Energy Companies (see Annex 3).

These databases were developed and updated by the COGEN teams in Europe and ASEAN.

Second, any information which could influence the companies's and the government's decision making was collected and disseminated. The COGEN programme regularly published and distributed information on the programme itself, on biomass energy and biomass energy equipment and on other related environmental issues. Examples are the regularly published COGEN Newsletter with a printing of 15,000 copies (see Annex 4); the Directory of Biomass Energy Companies with a printing of 2,000 copies and a publication series on "Competing in the ASEAN Biomass Energy Markets" (see also Annex 1). Mr. Pennington tries in this way to contact all interested parties at least once a month. Regularly, seminars are also organized, both in the EU and in ASEAN, to inform a wide public on their activities.

Third, pre-investment studies, for interested end-users of a specific European biomass equipment were conducted for free. As of May 1996, 50 companies had requested this service.

Fourth, the Enterprise Group can assist European companies in selecting and contacting a suitable partner in ASEAN. As of May 1996, the COGEN programme had assisted in the establishment of about 20 partnerships.

Finally, the FSDPs are monitored by an independent team of consultants and the results are available to all potential customers³. Visits to the actual plants are regularly organized as well⁴ and this will become much more important when all FSDPs are in full operation.

So, in June 1996, Mr. Pennington and his team had several important decisions to make. First, they had to come up with good criteria for the monitoring of projects. Second, the European Commission waited for an interim report about the COGEN programme with an evaluation of the current activities and with some suggestions for improvement. If worthwhile, the EC would consider continuing the programme.

³ The monitoring takes place for 2 days during the commissioning of the power plant, for 1 week one month later, and another week two months later.

⁴ As mentioned before, the 15 per cent subsidy by the COGEN programme is therefore called the access fee.

TEACHING NOTES

1. Teaching objectives

To give students practice in:

- strategic decision-making in the allocation of limited funds to the “best” projects;
- evaluation of the programme;
- strategic thinking about the future of the programme.

2. Synopsis of the case

The COGEN programme is an economic cooperation programme between the EU and ASEAN, sponsored by the European Commission, in order to promote European technology in the biomass energy equipment sector in ASEAN. The main tool to promote this technology is technical and financial support to selected European or European-ASEAN projects in the ASEAN region. Appropriate selection of projects in order to meet all parties's needs, i.e. the ASEAN customer, the European equipment supplier and the ASEAN governments, is therefore crucial. Accompanying marketing tools initiated by the COGEN-team are also discussed, as these are necessary to inform potential users and decision-makers about the potential of biomass energy and of European biomass energy equipment in particular.

3. Possible questions for discussion in class

1. As Mr. Pennington, what parameters would you use to select FSDPs?
2. How effective/efficient is this programme as a marketing strategy for European technology? What are its strengths and weaknesses? How would you improve it? How would you evaluate the performance of the COGEN programme, both in the short and medium term?
3. At the end of 1996, the COGEN programme Phase II will be finished. As Mr. Pennington, what kind of suggestions would you make to the EC to continue this programme (both in the short and medium term)?
4. If this case is used in an ASEAN country: How useful is this programme to the ASEAN country/ASEAN companies?

4. Teaching suggestions

This case is suitable for MBA-students and can also be used with motivated, advanced undergraduates. It can be used in a variety of courses: international marketing, strategic marketing management, marketing of non-profit organizations, international business, strategic management and some regional-focused courses (i.e. courses dealing with EU and/or ASEAN).

This case can be used in conjunction with a discussion on the changing (business) relations between the EU and Asia as described in the policy paper 'Towards a New Asia Strategy' by the European Commission in 1994.

5. Analysis

5.1 Selection of projects

The parameters used to evaluate each proposal should take into account the interests of all parties involved in the COGEN programme. These are: a) the ASEAN customer who buys the power plant, b) the European equipment supplier who tries to sell its equipment and c) the ASEAN governments who try to promote this kind of environment-friendly energy. For each group, appropriate quantitative parameters can be considered. As the COGEN-team in Bangkok did not reveal to the authors actual calculations of each parameter, only general descriptions for each parameter should be mentioned.

If necessary, students can be given information on the three main participants in the COGEN programme and what their primary interests are.

- **The customer:** The customer is in the first place interested in the **PROFITABILITY** of the project. In this particular case, this means the energy cost savings and the biomass residue disposal savings that can be obtained of a power plant using biomass residues. The best parameter to evaluate a project on profitability is the **internal rate of return**.
- **The equipment supplier:** The equipment supplier is in the first place interested to sell as much equipment as possible. Therefore, it is necessary that the supported FSDP is a showcase for other potential customers and that the project is easily **REPLICABLE**. Several parameters are used.
 - ◇ **Pay-back period:** many (small) investors are primarily interested in how long it takes before they have recovered the cost of their investment. The number of years it takes before the equipment is paid off is for them a major concern in evaluating a similar project. The COGEN-team considers therefore the pay-back period a good measure to evaluate investment behaviour. A short pay-back time will attract potential investors.
 - ◇ **Number of factories of similar capacities:** The first prerequisite for potential replication of demonstration-projects is of course the number of factories where a similar power plant *can* be installed. There will not be, for instance, many potential investors for a very large and powerful power plant. In fact, the COGEN programme is mainly focused towards the small- and medium-sized enterprises, which use their own biomass residues to produce energy. An ASEAN biomass database with a detailed inventory of all mills incl. capacity size has been established by the COGEN programme for this purpose.
 - ◇ **Geographical and sectoral spread of FSDPs already implemented:** As a showcase for new projects, the FSDPs are aimed in each ASEAN market and in each promoted biomass sector (rice, wood, coconut, palm oil and sugar). It is important for the European equipment supplier that similar projects can be visited by potential customers in a real-life environment in the country itself. New proposals for projects not yet present in a specific sector and/or market are therefore more eligible for support. As shown in table 2, COGEN should therefore focus more on the non-wood biomass sectors, especially in the Philippines and Indonesia, if an extension of the programme is agreed.

- ◇ **European supplier spread:** In order to support as many different European suppliers as possible, a new proposal from a European supplier, which has not yet received COGEN-support will receive a higher rating.
- **The ASEAN country:** For the ASEAN region and governments, the first aim is to decrease the dependence on traditional fossil fuels (which are mainly imported, thus worsening the trade deficit) and to improve the environment. Two related parameters are evaluated:
 - ◇ **Energy produced or substituted:** This measure quantifies the amount of biomass energy that will be produced by the power plant and the amount of traditional fossil fuels that has been substituted by biomass energy.
 - ◇ **Pollution avoided:** All types of energy production cause pollution, although in different degrees that can be quantified. Efficient biomass power plants are much more environment-friendly than traditional power plants. Burning biomass residues in open air is also very polluting.

It should be stressed that all of these above mentioned parameters are evaluated simultaneously. An index is constructed with appropriate weights that stress the importance of all factors. This allows for project proposals poorly evaluated on one of the three main criteria, still to be eligible for support if the evaluation on the other two criteria was excellent. This means, for instance, that a project in the rice sector in Thailand may be so economically viable that it receives a high score, even though there is already a similar project in the wood sector in Thailand. This explains also the concentration of FSDPs mainly in the wood sector in Malaysia and Thailand and none in the Philippines, and why a European supplier already has been eligible for support in 3 FSDPs. The EU company was able to submit profitable projects in different sectors in different ASEAN countries.

5.2 Evaluation of the marketing of the COGEN programme

As a start, students should be aware that biomass energy and biomass energy equipment is a very specialised business and that the market is relatively small, especially compared to traditional power plants and energy. Moreover, *efficient* use of biomass energy is quite new and unknown in the ASEAN region. The COGEN programme therefore puts a lot of effort in reaching this potential, relatively untapped, market for European biomass equipment through an extensive marketing programme.

European technology in ASEAN is perceived as high quality but also expensive. Most ASEAN companies would prefer local, Japanese or other Asian equipment. By providing a subsidy of maximum 15 % in the total European equipment cost, the COGEN programme can therefore facilitate market entry for European equipment suppliers in the ASEAN region. Pre-investment studies, free of charge, are therefore offered to interested customers. An economic analysis for a specific plant is carried out, showing economic indicators like IRR, pay-back time, disposal savings, etc. COGEN hopes to convince the customer by exact calculations that the costs for a biomass power plant in the long run are not so high as usually perceived and that the plant can be very profitable.

On the other hand, as most of the European equipment suppliers in the COGEN programme have already an agent or local partner in the region, one could wonder if the support is really needed to assist that particular equipment supplier to sell its equipment. Would the negotiation between the end-

user and the supplier not have been done anyway, without EC-support? Related to that, one should be aware of the difficulty for the COGEN-team in efficiently using European tax-money, i.e. European citizens's money, to support private investment projects.

The financial support offered by COGEN should therefore only be a short-term measure. More important is the accompanying marketing measures and the efficient use of the supported European showcase projects. If the European technology is well marketed (and COGEN can play a great role), it is the ASEAN customer who will decide to buy this equipment or choose another equipment, depending on the quality and not necessarily on the price reduction offered by the EC.

5.3 Evaluation of the COGEN programme

Short term

The EC provides a maximum grant of 15 per cent of the total equipment cost up to 400,000 ECU per project (approximately 1.35USD). This means that at least 85 per cent of the European equipment is paid for by the ASEAN end-user. The EC supports therefore a maximum of 1/6 of the total investment cost. The limited assistance by the EC demonstrates the emphasis of the COGEN programme as an *economic* cooperation programme, trying to increase *private* business between the EU and ASEAN. The ultimate aim, however, is to increase business between both regions without any EC-support at all.

Of course, it is possible that the projects carried out between the European supplier and the ASEAN end-user would have been done anyway, even without the support by COGEN. In this case, one could argue that the financial assistance of the EC was unnecessary. Although this may be true for the project itself, the benefits of the project as a showcase for other projects and the achieved multiplication effect justify the EC-money to a great extent.

On the other hand, many of the 16 FSDPs were awarded to the same European equipment suppliers. For instance, Nadrowski, a German supplier has already been awarded three FSDPs, while three other European suppliers each received EC-support for two FSDPs. Even though in the selection of FSDPs there is a parameter limiting the presence of a specific European equipment supplier in too many projects, is it acceptable for public EC-funds to provide subsidies to the same European companies two or even three times? COGEN should be aware not to support too many times the same equipment supplier. This might be criticized by other European equipment suppliers or maybe by industry groups in Europe.

Long term

The best way to evaluate the COGEN programme from a long-term perspective is to see how many new European projects have started in the ASEAN markets by replication of the demonstration projects, or other ways. As mentioned before, the demonstration projects can be visited by all interested parties. High-quality projects in real life conditions are the best way to convince potential new customers of their effectiveness and efficiency in terms of energy source and waste disposal. However, the

major weakness of the COGEN programme, as of now, is that only 5 of the 16 demonstration projects are in full operation. Their impact is therefore difficult to measure and the accompanying marketing measures cannot be carried out at a maximum efficiency level. If the COGEN programme is prolonged, making full marketing use of the existing projects will be one of the most important actions.

Difficult to measure, but equally or even more important, is the increased awareness generated through the COGEN programme, for biomass energy in general and European technology in this sector in particular. By the regular dissemination of information to a large group of business people, government officials and media (15,000 entries and more) and the availability of a strategic information system, it is at least certain that the COGEN programme was able to reach an increasing number of people, many of whom had limited knowledge about the potential of biomass energy. Between acknowledging the advantages of this type of energy and effectively using biomass to produce energy, there is still a large gap, however, which can only be filled by the quality of European biomass equipment technology itself to promote their use in ASEAN.

5.4 Suggestions for the future of the COGEN programme

Short term

The COGEN programme is an economic cooperation programme, aiming to increase business cooperation between European and ASEAN companies. The primary tool to achieve this is to increase awareness of European technology. The FSDPs and the accompanying marketing measures are the major instruments of the programme. As of now, 16 projects have already received financial support. However, the sectoral and geographical spread has not been successful so far, as no projects have been selected in the sugar and coconut sectors and only 1 project in the rice sector. Likewise, there are no FSDPs yet in the Philippines and in Singapore, while there are only 3 in Indonesia. Although providing more subsidies to many new FSDPs in a next phase would not be acceptable, as too many supported power plants will destroy the market, it would be worthwhile to at least have a FSDP in each biomass sector and in each ASEAN country. If there are sufficient FSDPs, the next phase of the COGEN programme should then mainly benefit from these existing demonstration projects marketing tools to promote European technology. Once in full production, the power plants should be regularly visited; information of the performance of the plants should be widely disseminated, etc. So far, this cannot be done at a maximum efficiency level, as only 5 out of 16 projects have started full production. Alternatively, in the short term should they concentrate on making sure the other 11 projects actually materialise.

Another short-term perspective for the COGEN programme is that the European Commission will soon give the green light to expand the support of demonstration projects to Vietnam. Technical studies by the COGEN-team have already been made and have shown there is great potential in the rice sector for European equipment suppliers.

In the mean time, COGEN should continue its matchmaking services through the COGEN Business Line, as joint ventures and other strategic partnerships between ASEAN and European companies will ensure long-term relationships and business cooperation between both regions.

Medium term

Meanwhile, the COGEN programme is also researching new possibilities to expand the COGEN programme to other environment-friendly energy types to be used in different types of industries. COGEN has now a lot of experience in the biomass energy sector and the acquired expertise could be useful for other environmentally friendly energy. In general, the COGEN “methodology” could be rather easily applied in similar small and medium scale private power producers programmes. Expansion could, for instance, go to power plants making use of environment-friendly energy like natural gas and clean coal. Natural gas is easily available in ASEAN and both types of energy are economical competitive and environmentally clean. An additional advantage of expansion to these energies is that the types of industries which could benefit from it is not restricted to the agro-industries, but could be expanded to other sector that are using a lot of energy like the ceramic industry, metallurgy, etc.

Practically, the COGEN databases could be relatively easily expanded to these industries and energy equipment, using the same methodology. Moreover, many European equipment suppliers, able to produce the equipment for biomass, can produce similar equipment for the natural gas and clean coal energy as well, especially as the equipment is meant for the same power production capacity (<50 MW). Expanding the European database of equipment suppliers should therefore not be too difficult.

5.5 How useful is this programme to the ASEAN country/ASEAN companies?

In general, the COGEN programme promotes clean energy, more specifically biomass energy, in the ASEAN region. For agro-industrialists - the focus-group for this type of energy - this may offer many advantages, like:

- disposal of the biomass residues. It is estimated that about 25 % of any dry agricultural residue is waste. Disposal savings by using these residues to produce energy may be high, while at the same time costs can be further reduced by the diminished power costs.
- independence from the grid. By producing its own energy, the agro-industrialist becomes independent from the national power system. In the Philippines, for instance, brown-outs or power failures up to 10 hours a day were not uncommon in the beginning of the 1990s.
- profits by selling excess energy to other users. The energy produced can be more than needed for own use. The agro-industrialist can sell this extra energy to other users or to the national electricity agency and make some extra profit. In Thailand, for instance, about 50 small power producers, of which about 20 % are biomass producers, started to supply power to the grid.

The COGEN programme endeavours the promotion of European biomass equipment in the ASEAN region. This equipment may not have been known to the ASEAN end-users without this programme. The COGEN programme may therefore increase competition among European, US, Japanese, other Asian or local equipment manufacturers. And increased competition is usually beneficial for the customer.

For the government, clean energy may help reduce the pollution and improve the environment, a concern increasingly heard among citizens. Biomass energy can also result in a lower dependence on fossil fuels, which are mainly imported and thus worsen the trade balance as well.