Thailand

Regulatory Framework for the Energy Sector

Final Report

Submitted to

National Energy Policy Office

August 1998

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Submitted to

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London Economics is leading a consortium of companies on a World Bank funded project for the Provincial Electricity Authority (PEA) that is being overseen and monitored by the National Energy Policy Office (NEPO). Thailand is currently undergoing significant reform and restructuring of its energy sectors—including the sale of further shares in the Electricity Generating Company (EGCo), the corporatisation and restructuring of the Electricity Generating Authority of Thailand (EGAT) and the privatisation of PTT. This is creating a situation where the regulatory needs of the system need to be reviewed and the existing regulatory system operated by NEPO assessed against these future needs.

This report is the final report from the consortium for this project. As such, its primary aim is to provide an overview of the work that has been undertaken and a guide to what further work should follow. The project was split into two phases, these were:

- *Phase One*. This phase was primarily concerned with the operation of regulation and the issues arising from the structure of the industries to be regulated; and

- *Phase Two*. Regulation cannot occur within a vacuum. Both an institutional structure and a legal structure to make regulation effective is required. This phase developed aspects of both areas.

Since the work was started in early 1997 there have been significant changes to the Thai economy. These have had a major impact on the energy industry and have, if anything, made the restructuring all the more important. They have, however, also increased the burden on the development of a new regulatory system since the planned privatisation of PTT in 1999 can only go-ahead on a sustainable basis with the vast majority of the regulatory issues resolved. This work has provided a platform for the resolution but further work is required.

Operation of regulation

The operation of regulation can only be established once a set of coherent and complementary objectives have been established. Establishing an acceptable set of objectives for the Thai energy sector were the first key requirement for the project. From this it was possible to establish that:

- as light-handed a regime as possible was desired;

- providing companies with incentives to become more efficient is important—so, use of a CPI – X based approach to price

regulation with three to five year intervals between price reviews has been proposed; and

- facilitating as great a role for the private sector as is possible is also important.

These operational aspects of regulation do, however, have to be weighed against the fact that some structural solutions best able to deliver these outputs are not available. When the ideal structural solution is not available, greater reliance has to be placed on conduct regulation.

Institutional requirements for effective regulation

To implement the type of economic regulation desired in Thailand requires:

- an independent regulatory agency—independence allows the confidence of private investors to be established;
- adequate reporting and dispute resolution systems to be put in place; and
- well trained and motivated staff for the agency to be hired.

Establishing this type of agency within the general constraints that exist within a civil service is difficult. Training will be a major issue, as will the retention of key staff. Further, establishing this type of office will not happen overnight. A clear transitional plan, taking staff from the existing regulatory office (NEPO), and using this as a core for the new independent office will be vital for the successful transition.

There are a wide range of internal issues that must be determined and then developed for the regulatory office to gain the trust of all the parties in the sector. Transparent and well thought-out processes must be established.

Legal architecture

No matter how good a regulatory regime is proposed, the key to ensuring that it works is the legal architecture. Economic regulation has so far been achieved through state-ownership and the primary legislation establishing the individual companies. This will not be available for a new independent regulatory office and so a new legal structure needs to be established. At the heart of this structure, which will be based on the enabling rather than prescriptive approach, will be:

- a new piece of primary legislation establishing the regulatory office and the other regulatory legal instruments to be used in the enforcement of regulation; and

- secondary legislation, such as licenses.

Much of the legal framework has been developed by this project. What is now needed is work on turning the drafts into actual legislation.

Next steps

Given the situation that Thailand is facing, continuing the momentum for the development of the new regulatory regime that this project has established is vital if other deadlines are to be met. This means that there are a range of activities that now need to be undertaken. These range from training to the development of the internal rules for the regulatory office. This project has provided a strong launch pad for this work, but much further work is needed.

1 Introduction

London Economics is leading a consortium of companies on a World Bank funded project for the Provincial Electricity Authority (PEA) that is being overseen and monitored by the National Energy Policy Office (NEPO). Thailand is currently undergoing significant reform and restructuring of its energy sectors—including the sale of further shares in the Electricity Generating Company (EGCo), the corporatisation and restructuring of the Electricity Generating Authority of Thailand (EGAT) and the privatisation of PTT. This is creating a situation where the regulatory needs of the system need to be reviewed and the existing regulatory system operated by NEPO assessed against these future needs.

This report is the final report from the consortium for this project. As such, its primary aim is to provide an overview of the work that has been undertaken and a guide to what further work should follow. A significant number of reports have been produced under this project, listed in annex 1, and rather than replicate in great detail what they say this report highlights the key issues and cross-references the existing reports. The project was split into two phases, these were:

- *Phase One*. This phase was primarily concerned with the operation of regulation and the issues arising from the structure of the industries to be regulated; and

- *Phase Two*. Regulation cannot occur within a vacuum. Both an institutional structure and a legal structure to make regulation effective is required. This phase developed aspects of both areas.

In conjunction with this project, but funded separately by NEPO, were two further projects. These had significant implications for the operation of regulation and the development of the Thai system and, as such, fed into the final recommendations made under this World Bank funded project. The projects covered:

- the future structure of the gas industry; and

- the measurement of the efficiency of the electric supply industry (ESI).

While this project has been underway there have been significant changes to the Thai economy. In the early part of 1997 when the project commenced the Thai economy was vibrant and growth was continuing at significant speed. This was placing excessive demands on the energy sector with increased demand for power leading to a demand for independent power producers

(IPPs) and greater demand for gas. However, the financial crisis in South East Asia has led to a significant reduction in the growth of energy demand and a reduction in immediate investment requirements. This has not, however, removed the need for significant industry restructuring and regulatory reform. If anything, the need has increased since:

- the desire to improve the efficiency of the energy sector is all the stronger; and
- the planned privatisation of the gas industry and parts of the ESI is impossible without clear understanding of how the regulation of the energy sector is going to evolve.

So, the results of this project are of key importance to the future of the energy sector in Thailand, and more generally to the Thai economy.

This final report is structured as follows. Section 2 provides an overview of the first phase of the project while Section 3 considers issues raised in the second phase. Section 4 then provides a series of conclusions and recommended future steps. These future steps are important to maintain the momentum started by this project and to ensure that other aspects of the privatisation timetable are not hindered by the regulatory reform.

2 Summary of Phase One

Phase One of the project was concerned with three broad areas. These are:

- the generic aspects of regulation and its operation, such as options for the regulation of prices and investment;
- the key issues arising from industry structure, the options for restructuring and their implications for the operation of regulation; and
- some general comments about the institutional aspects of regulation.

This third broad area is really the focus of the second phase of the project but was included here so that implications form the other two areas could be evaluated. This Section of the Final Report is only concerned with the first two areas of Phase One, the third area is covered in the following Section.

2.1 The operation of regulation

This part of the phase was concerned with generic aspects of regulatory behaviour. For example, how should a regulator regulate the prices charged by a company? Further, should the regulator be concerned with regulating prices at all?

These sorts of issue cannot be investigated without having a series of over-arching objectives for regulation. The objectives for the energy regulator in Thailand are set out in Table 2-1.

Table 2-1 : Objectives of regulation

Number	*Objective*
1	Promotion of competition where feasible and cost-effective.
2	Ensuring the long-term viability of efficient companies operating in the industry.
3	The protection of consumers.
4	The provision of transparent and easily understandable information.

These four objectives then allow the general operation of regulation to be established. Table 2-2 summarises the key recommendations from Phase One

on the key aspects of regulatory behaviour. These, in turn, help determine the form that the regulatory agency should take—discussed in Phase Two.

Table 2-2 : Summary of recommendations for pricing and investment

Aspect	*Recommendation*
General aspects of price regulation	
Form of incentive regulation: 1st price control.	Revenue-cap
Form of incentive regulation: 2nd and later price controls.	Revenue-cap or hybrid.
Lifespan of control: 1st period.	Three years.
Lifespan of control: 2nd period.	Three or five years.
Lifespan of control: later periods.	Five years.
Ability to reopen price controls.	Only in very limited circumstances.
Financial aspects of regulation	
Depreciation.	To be based on the replacement cost of the assets with no economic value test.
Regulatory asset base: initial value.	To be based on the replacement cost of the assets, written down to take account of the impact of the national uniform tariff.
Regulatory asset base: rolling-forward methodology.	Initial value to be rolled-forward by the inflation rate and the addition of net new investment. A system should be put in place to recover the value lost through any periodic economic value tests.
Allowed rate of return.	To be determined using the weighted average cost of capital. Values for the elements of the calculation should be established during the next six months.
Operating costs	
Target values.	These should be based on the costs associated with an efficient company.
Scope of control.	Should be limited to controllable costs only.
Investment	
Inclusion in the asset base: AICC.	Assets in the course of construction should be included as the cost is incurred.
Inclusion in the asset base: Value.	Inclusion at actual value provided that it does not exceed the forecast level. Cost over-run to be treated on a case-by-case basis.
Treatment of stranded assets.	The regulator should reserve the right to

Table 2-2 : Summary of recommendations for pricing and investment

Aspect	*Recommendation*
	strand assets but should agree to undertake no stranding of assets involved up to the end of the 1st price review. During this time the risks and benefits should be further assessed and then a decision taken relating to investment made after that time.
Customer contributions and capital grants: rate of return.	Should not be charged unless a 'taxation' system is also to be introduced.
Customer contributions and capital grants: depreciation.	Should be charged.
Other issues	
Approach to establishing revenue requirement.	The NPV approach should be adopted.
Trade-off between X and P_0.	X should be set as the long-term annual efficiency saving expected for the industry.

The issues summarised above are discussed in more detail in two Phase One reports. They are:

- *Regulatory Functions: Pricing and Investment Regulation*; and
- *Overview*.

2.2 Industry structure issues

There is a clear interaction between the two types of regulation that exist. Regulation can be concerned either with structure or conduct. In an ideal world, structural solutions would be employed to create a situation where competition can exist and consequently no conduct regulation is required. However, this is often not possible and consequently some conduct regulation is required. Since conduct regulation is a poor substitute for real competition, it is better to place an emphasis on structural solutions. If a structural solution is not possible, say for political or social reasons rather than technical ones, then conduct regulation is but a third-best solution. Each of the key industry segments are treated separately below.

2.2.1 Electricity generation

This is the segment of the ESI most susceptible to the introduction of competition, either through competition for the market in the form of IPPs or real competition through a power pool. Although there are plans for a power pool in Thailand they are still a long way off, especially after the impact of the financial crisis. Since the ideal structural solution is not available a conduct based one will have to be followed. Key recommendations are summarised in Table 2-3. These issues were discussed in the *Electricity Generation and Purchase* report.

Table 2-3 : Recommendations for the generation market

Aspect	*Recommendation*
General regulation of generation	
Price regulation: short-term.	Least-cost expansion to be achieved through regulation of the Single-Buyer. A transition phase is to be established.
Price regulation: long-term.	Regulatory oversight of competitive market to ensure that no abuse of monopoly power occurs.
Industry structure.	Regulatory oversight to occur so that any situations where market power could be developed through mergers, or even organic growth, can be halted and reversed.
Regulation of the Single-Buyer	
Processes.	To be agreed with the regulator prior to their implementation.
Incentive regulation for least-cost expansion.	A system involving a mixture of regulatory approval for innovative projects and disallowal of costs associated with non-least-cost expansion (capped to ensure that the Single-Buyer is not bankrupted) should be developed.
Transitional issues raised by the move to a competitive market	
Vesting unit.	A special holding unit, separate to EGAT, should be established.
PPAs for internationally traded electricity.	Vested in the PPA holding unit.
Existing PPAs with EGCO and IPPs.	Either vested with the PPA holding unit or converted into CfDs held by the holding unit if the IPPs are willing.
New IPPs prior to establishment of competitive market.	PPAs to be signed but with a clear statement that once the competitive market is established, which should happen as soon as is practicable, the PPAs will be converted into CfDs held by the special PPA holding unit.
EGAT Hydro and EGAT powergens	CfDs to be established as soon as possible to help the development of the knowledge and use of these financial

Table 2-3 : Recommendations for the generation market

Aspect	*Recommendation*
	instruments.
Duration of CfDs	For any IPP that switches the CfD should be of the same life-span as the remaining life in the PPA. For EGAT Hydro and the EGAT powergens, shorter length CfDs should be signed.
Need for regulation.	There will be a need for regulation, both in the short-term and in the long-term. This could be especially important for those IPPs that choose to retain their PPAs and so need to disclose their true energy costs.
Funding.	A levy/subsidy regulatory mechanism should be put in place to meet any short-fall in revenue or to allow the channelling of excess revenue back to customers (or alternatively to be retained to meet future short-falls).

One of the most contentious issues to be addressed in Thailand during the last year is the future structure of EGAT, the vertically integrated electricity generation and transmission company. Initial proposals, to split EGAT's thermal generation activities into three separate businesses, drew significant labour protest that led to a one-year review of the proposals. The final recommendations involve a phased restructuring of EGAT with its existing thermal generation being spun-off into two businesses sometime in the next three to five years. The major investment in Ratchaburi will be opened to the private sector next year.

To ensure that these structural solutions do not impede the growth of a power pool it is vital that consideration be given to the type and duration of power purchase agreements that the new businesses are given.

2.2.2 Electricity distribution and transmission

The area of the ESI that is least prone to structural solutions and so which will require detailed conduct regulation is the natural monopoly wires activity. This encompasses the transmission and distribution businesses of EGAT, the Metropolitan Electricity Authority (MEA) and PEA. Table 2-4 summarises the key recommendations for these businesses. These issues were discussed in the *Regulation of Electricity Transmission and Distribution* report.

Table 2-4 : Recommendations for electricity distribution and transmission

Aspect	*Recommendation*
Scope of regulation: short-term.	To cover all aspects of transmission, distribution and supply.
Scope of regulation long-term.	The introduction of competition for supply, new connections and major new investments should be considered. Residual regulation may be required for these aspects. Other core aspects should still be subject to regulation.
Price regulation.	This should be based on revenue-caps.
Supply margin.	Work is required to establish a fair margin to determine the level of profits that supply companies can earn.
Relationship with uniform tariff fund.	The regulatory body should be given an over-sight responsibility. This should cover both the operation of the fund and the way in which the fund's managers are chosen.

2.2.3 The gas supply industry

The final industry to consider is the gas supply industry (GSI). This is central to the development of the whole energy sector—many of the IPPs will be gas fired, as will some of the small power producers. Although the GSI has developed significantly over the last 15 years, much to the credit of PTT, there is still much to do. However, the gas industry is at a point of change where significant private sector participation can occur, even before the partial privatisation of PTT. Table 2-5 summarises the key recommendations for the GSI. Although there was a separate report in Phase One of the project concerned with these issues, *Regulation of PTT's activities*, the separate project undertaken for NEPO provided a report in October 1997 that superseded the Phase One report.

The partial privatisation of PTT poses the most significant regulatory concern at the moment since the plans are for a sale sometime in 1999. For this to be accomplished a range of key decisions relating to the future regulatory structure must be taken. These, plus other key issues, are outlined in the final Section of this paper.

Table 2-5 : Recommendations for the Gas Supply Industry

Aspect	*Recommendation*
Scope of coverage of regulation	In the short-term it is likely to include most activities undertaken by PTT but in the long-term it should concentrate on the pipeline activities.
Gas contracts	There would appear to be no problem at the moment but PTT should not enter into any further pure take-or-pay contracts. Additionally, it should not be allowed to contract for all the gas in any new fields.
Incentive form of regulation	For at least the first price control period this should be based on a revenue-cap. It could then change to a hybrid if insufficient incentive is provided by the revenue-cap system.
Determination of an efficient level of costs	Owing to the national monopoly status of PTT this is difficult although there are some possible solutions based on the use of several complementary approaches.
Vertical nature	Accounting separation and some conduct based controls should be introduced between the pipeline and retail businesses to ensure that competition can develop. The regulator should reserve the right to enforce an ownership separation if the conduct based approach does not work.

3 Summary of Phase Two

Having determined many of the operational questions in Phase One it was then the role of Phase Two to ensure that the right framework existed to allow the effective operation of regulation. This framework involves:

- the institutional structure for regulation; and
- the legal instruments for regulation.

3.1 Institutional issues

3.1.1 Phase One

As mentioned previously, Phase One of the project developed several of the key broad recommendations for institutional design, especially those relating to the over-riding concern of independence. Table 3-1 provides a summary of the key recommendations from Phase One.

Table 3-1 : Summary of institutional recommendations from Phase One

Aspect	*Recommendation*
Independence	The regulatory office, when separated from NEPO, should be independent..
Siting	It should sit alongside NEPO as a body within the Prime Minister's Office and answer to either the Prime Minister or a Minister within the office.
Funding	It should be funded by a levy on customers that is passed through the companies.
Appointment/ dismissal	Clear guidelines relating to both appointment and dismissal should be agreed.
Sectoral coverage	A single regulatory body covering both the electricity and gas industries should be established.
Commission	A commission of five members should run the regulatory office with the members being chosen from among respected and technically competent individuals.
Term of office	This is to be established, but should be between three and five years. Importantly, the initial term should be staggered so that there is consistency between commissions.
Functional coverage	All economic functions (pricing, investment and competition policy)

Table 3-1 : Summary of institutional recommendations from Phase One

Aspect	*Recommendation*
	should be covered plus several of the non-economic functions (especially quality of service). Clear interfaces with the other relevant bodies should be established.
Customer representation	A national electricity customer representative body should be established to voice the concerns of consumers and ensure that they are represented during regulatory debate. This should be funded by a further levy on customers. Regional electricity bodies formed on a matching basis to MEA and PEA should be established to help provide information to consumers and act on their behalf when it proves difficult to settle disputes between the company and a customer. The possibility of a gas representative body should be established and then its need reviewed to establish whether it is needed.

As can be seen, these are quite comprehensive in their coverage, although full support for some of the recommendations could not be provided until Phase Two of the project. Phase Two, therefore focused on a small number of detailed issues, including:

- the detailed agency design issues;
- key internal documentation issues;
- training requirements; and
- issues arising from the transitional period.

Each of the first three elements is addressed in this Section while the fourth is as aspect of the next steps to be taken, discussed in the following Section.

3.1.2 Agency design

There are several ways in which a regulatory agency can be designed. The two broad approaches are:

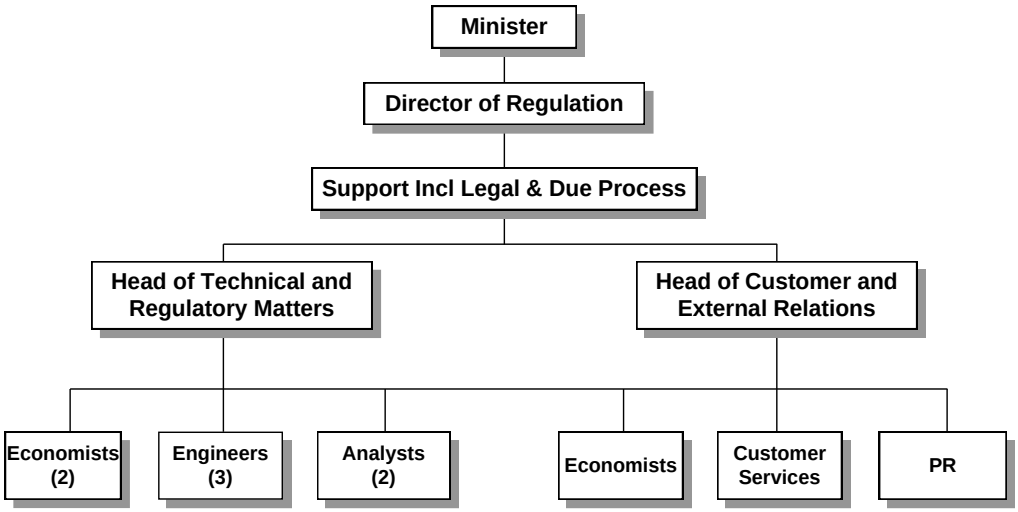
- on an industry segment basis; or
- on a functional basis.

There are several key concerns that should be borne in mind. These are:

- the desire to keep things simple, as small as is practicable and transparent;
- the desire to minimise overlap and ensure economies of scale and scope; and
- the limited financial and human capital resources that are available, at least in the short-term.

Owing to these concerns, a structure similar to that shown in Figure 3-1 should be adopted. This is for a regulatory agency based on a functional structure.[1]

Figure 3-1 : Functional structure



This type of structure should form the long-term basis of the energy regulatory agency. It is quite adaptable and should easily grow out of any interim arrangements put in place.

[1] Job descriptions for key members of staff in the regulatory agency were provided in the Phase Two *Institutional issues* report.

3.1.3 Internal documentation

Within the regulatory agency there are four key documents that provide the framework for what the agency is seeking to deliver. These documents are described in Table 3-2 below.

Table 3-2 : Key internal documents

Document	*Comment*
Regulatory strategy	A statement of the: • key regulatory objectives; • primary policies; • a review of how the regulatory agency will meet its objectives; and • a review of top level issues facing the regulatory agency.
Regulatory plan	This document sets out how the objectives of the agency will be achieved through a discussion of the tasks being faced. It should also set out: • implications for workloads and resources; • performance measures; and • deadlines.
Business and resource plan	The business plan for the regulatory agency is like that of any commercial company. On an annual basis a statement of the resourcing requirements, budgets and reporting requirements should be produced. This provides a measurable indication of the way in which the agency is expected to operate for the coming year and can then, *ex post*, be assessed against the out-turn budget and actions.
Training plan	A key to being able to deliver the desired actions is ensuring that adequately trained resources are available. The training plan is key to meeting this need.

These documents should be viewed as a priority element in the development of the regulatory agency in Thailand.

3.1.4 Training

The amount of human capital available in Thailand with formal or informal training in economic regulation is limited. Since a key to the effectiveness of the regulatory agency is a well trained staff it is central to the development of regulation that a training programme be put in place. There are going to be two aspects to any such programme. They are:

- a short-term crash-course to meet immediate needs, possibly using an already established course such as the World Bank Florida course; and

- a long-term plan of continuous training to meet:
  - changing aspects of the regulatory regime; and
  - the training of staff as they join the regulatory agency.

Table 3-3 provides an overview of the type of training that will be required.

Table 3-3 : Possible areas for training

Area	*Topics to cover*
Regulation	• economic regulation (tailored for those with varying degrees of existing knowledge) • details of the regime adopted for Thailand (possibly based on the Seminars given under this project) • application of the regime (on the job, following awareness and technical training) • financial modelling (development of existing skills) • technical aspects of the industry (for those with the necessary professional knowledge)
Industry issues	• how the companies operate (not technical) • the economics of the industry • performance measures and bench-marks
Technical skills and up-dates	• audit and verification (long term development) • dispute resolution (basic approaches) • customer policy (awareness and specific skills) • external relations (awareness and specific skills) • systems development and testing (basic or development of existing basic skills) • economics, finance, engineering (up-dates only)
Management and organisational issues	• project management (awareness not performance) • information management - specification, definitions, verification etc. (basic techniques) • due process (how to use the procedures) • decision making (introduction to models and approaches) • negotiation (basic approaches) • personal skills (basic approaches) • communication (basic approaches) • finding and managing consultants.

It is important that any training programme include the final area of management and organisational issues since this is an area often neglected but which is vital for ensuring a successfully operating regulatory system.

3.2 Legal issues

The second key area for Phase Two was the development of the legal architecture for regulation. Table 3-4 provides an overview of the initial recommendations that were made in this area.

Table 3-4 : Summary of legal recommendations from Phase One

Aspect	*Recommendation*
Legal model	Given the uncertainty about the timetable and the future ownership structure of the industries, a flexible approach is required. This can be achieved through a mixture of primary legislation (establishing the regulatory office and enabling it to regulate the industries), and secondary legislation and administrative procedures such as licences. Licences should form the primary basis of the implementation of regulation and act as the key statement of the companies' responsibilities.
Dispute resolution	A clear dispute resolution system is required. This will involve many layers, such as the customer representative bodies and the courts. However, a separate division within the regulatory body should be established to handle substantive arguments between the companies and the regulator. A system needs to be put in place that will ensure that spurious arguments aimed at delaying the implementation of regulatory decisions are penalised. This could be achieved through a form of bail-bond or by implementing the decision until an appeal overturns the decision.
Information provision	This is a key input to the regulatory process and so must figure prominently in the licence conditions. It may be necessary to establish working committees to provide national definitions for some accounting items or to agree the basis on which certain types of information should be provided, for example, agreeing a way in which commercially sensitive information should be provided to the regulator.

From these initial recommendations it was possible to establish:

- a skeleton of the key clauses for the primary legislation to establish the necessary institutions and secondary instruments—this skeleton should provide ample information for either a government drafting team or independent lawyers

to quickly produce a draft Energy Act to place before parliament; and

- detailed clauses for the various licences that will act as the main instrument for enforcing economic regulation in the energy sector.

Both sets of information were provided in the *Final Legal Report* in Phase Two (which is being re-issued in conjunction with this *Final Report*). Annex 2 provides the summary of the application of the key licence clauses.

4 Conclusions and Next steps

4.1 Summary

During the course of this project a significant amount of detailed work has been undertaken for NEPO. The various reports from the two Phases of the projects have left Thailand with a strong basis to launch the actual implementation of the new regulatory regime and, further, will be of use as a benchmark for regulatory regimes that have to be developed in other sectors.

It is clear, however, that the work of establishing a new economic regulatory agency is far from complete. This is partly because the World Bank project was never envisaged as being the whole work, it was but the beginning of a long-term project, and partly because the need for regulation is continually changing, especially as substantial changes have occurred during the last year. As such, having a clear implementation plan and an understanding of the next steps is vital.

4.2 Implementation plan

As part of the institutional report for Phase Two an implementation plan for the establishment of the National Energy Policy Regulation Office (NEPRO) was proposed. This is reproduced below. As can be seen, there are a significant number of action points to be addressed. Even though the situation in Thailand has changed since this proposal was made, the basic proposal is still sound. NEPO has effectively started addressing some of these issues but there are still some issues left unresolved. Having an overall plan, such as this, helps ensure that an even growth in the regulatory system occurs and that all aspects are adequately covered.

Table 4-1 : Implementation plan for NEPRO

Action	*Responsibility*	*Date*
Appoint project manager (PM)	Secretary-General of NEPO	
Appoint/transfer staff for set up project (Project Team)	PM to agree with Secretary-General	
Agree objectives for Regulatory unit that are **SMART** – i.e. **S**imple, **M**easurable, **A**chievable, **R**esourced, **T**imed	Project Team to develop and PM to agree with Secretary-General	
Prepare costed project plan for completing the set up of the Regulatory unit	Project Team to develop and PM to agree with Secretary-General	
Appoint/allocate other senior staff to complete senior team of Regulatory unit	Secretary-General	
Develop Regulatory Strategy for transitional period	Senior team to develop and agree with Secretary-General	
Develop five year Regulatory Plan for transitional period with milestones for regulation of the power and the gas industries	Senior team to develop and agree with Secretary-General	
Develop and implement systems and procedures, concentrating on information management and relations with the companies and other external stakeholders	Project team	
Appoint/allocate remaining staff	Secretary-General	
Create register of approved consultants in various areas of work	Director of Regulation	
Devise training and development plan, including provision for links with other agencies and the companies	Director of Regulation	
Develop set up plan for Independent regulatory agency	Director of Regulation	

4.3 Next steps

If the implementation plan is distilled down into a number of key points and these are linked to the other outstanding issues, it is possible to determine some key next steps that have to be taken. They include:

- the finalisation of the primary and secondary legislation;
- the development of the regulatory office, its resources and staffing plan;
- the training of key staff to form a nucleus for the regulatory office—some training of staff from the companies would also help facilitate the successful development of the new regulatory regime; and
- the further development of key regulatory instruments.

Given the impending privatisation of PTT it is vital that this work, and any other that is deemed necessary, is commenced as soon as is possible.

Annex 1: Reports produced

Main reports produced in Phase One of the project were:

- *Institutional issues;*
- *Regulatory functions: Pricing and Investment regulation;*
- *Electricity Generation and Purchase;*
- *Regulation of Electricity Transmission and Distribution;*
- *Regulation of PTT's activities;* and
- *Overview.*

Additional reports produced during Phase One were:

- *Phase One inception report;*
- *An overview of energy regulation* (for a seminar in April 1997); and
- *Regulation of technical and consumer service aspects.*

Reports produced for Phase Two of the project include:

- *Phase Two Inception Report;*
- *Final legal report* (including an article structure for the primary legislation and draft clauses for various licenses); and
- *Institutional issues* (including parts on institutional structure, consumer representation and information flows).

Notes addressing some specific issues raised by the client were also produced under both phases.

Annex 2: Licence requirements

Table 1 : Application of licence clauses

Condition		*Electricity*				*Onshore Gas*		*Offshore Gas*
		Generation	Transmission	Distribution	Supply	Distribution	Supply	Transmission
GC1	Interpretation	✓	✓	✓	✓	✓	✓	✓
GC2	Maintenance of accounts	✓	✓	✓	✓	✓	✓	✓
GC3	Prohibited and required services	✓	✓	✓	✓	✓	✓	✓
GC4	Prohibition of cross-subsidy	✓	✓	✓	✓	✓	✓	✓
GC5	Anti-competitive practices and discrimination	✓	✓	✓	✓	✓	✓	✓
GC6	Confidential information	✓	✓	✓	✓	✓	✓	✓
GC7	Information access and audit rights for the Regulatory Office	✓	✓	✓	✓	✓	✓	✓
GC8	Compliance with the system code	✓	✓	✓	✓	✓	✓	✓
GC9	Ancillary services	✓	✓	✓	✓	✓	✓	✓
GC10	Requirement to enter into certain agreements	✓	✓	✓	✓	✓	✓	✓
GC11	Powers to carry out street works etc.	✓	✓	✓	✓	✓	✓	✓
GC12	Revenue regulation	✓	✓	✓	✓	✓	✓	✓
GC13	Economic efficiencies	✓	✓	✓	✓	✓	✓	✓
GC14	Payment of licence fees	✓	✓	✓	✓	✓	✓	✓

Table 1 : Application of licence clauses

Condition		*Electricity*				*Onshore Gas*		*Offshore Gas*
		Generation	Transmission	Distribution	Supply	Distribution	Supply	Transmission
GC15	Compliance	✓	✓	✓	✓	✓	✓	✓
GC16	Risk management and insurance	✓	✓	✓	✓	✓	✓	✓
GC17	Use of appropriate staff	✓	✓	✓	✓	✓	✓	✓
GC18	Preparation for emergencies and security arrangements	✓	✓	✓	✓	✓	✓	✓
GC19	International obligations of the licensee	✓	✓	✓	✓	✓	✓	✓
GC20	Long term planning procedures	✓	✓	✓	✓	✓	✓	✓
GC21	Research and development	✓	✓	✓	✓	✓	✓	✓
GC22	Investigation of offences	✓	✓	✓	✓	✓	✓	✓
GC23	Complaints handling procedures	✓	✓	✓	✓	✓	✓	✓
GC24	Minimum standards	✓	✓	✓	✓	✓	✓	✓
GC25	Dispute resolution	✓	✓	✓	✓	✓	✓	✓
GC26	Provision of infrastructure		✓	✓		✓		
GC27	Economic purchasing				✓		✓	
GC28	Disabled customers and customers of pensionable age				✓		✓	

Table 1 : Application of licence clauses

Condition		*Electricity*				*Onshore Gas*		*Offshore Gas*
		Generation	Transmission	Distribution	Supply	Distribution	Supply	Transmission
GC29	Statement of practice on payment of bills				✓		✓	
GC30	Efficient use				✓		✓	
GC31	Supply and connection terms				✓		✓	
GC33	Top-up and standby supplies of electricity				✓			
GC34	Change in ownership	✓	✓	✓	✓	✓	✓	✓