29 July 2009

Dr John Tamblyn
Chair
Australian Energy Market Commission
PO Box A2449
Sydney South NSW 1235

Dear Dr Tamblyn

Response: Australian Energy Market Commission's Commissioned Reports on Total Factor Productivity

ENERGEX Limited (ENERGEX) welcomes the opportunity to respond to the Australian Energy Market Commission's (AEMC) commissioned reports on Total Factor Productivity prepared by Economic Insights and the Brattle Group. In addition, ENERGEX has provided some comments on the AEMC's revised statement of approach issued in April 2009.

ENERGEX considers that the main findings of the commissioned reports lends strong support to our view that TFP, as per the Rule Change Proposal, is not a satisfactory alternative form of regulation under the National Electricity Rules. ENERGEX considers it does not contribute to the achievement of the National Electricity Objective.

As outlined in our submission on the AEMC's Framework and Issues Paper, ENERGEX does not support the development of a TFP based methodology. This is due to concerns regarding the impact of a range of unresolved methodological and data availability issues and the lack of a 'steady-state' across the electricity distribution sector.

Please do not hesitate to contact me on 07 3407 4161 should you wish to discuss this submission in any way.

Yours sincerely

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ENERGEX Limited
ABN 40 078 849 055

RESPONSE TO AUSTRALIAN ENERGY MARKET COMMISSION – COMMISSIONED REPORTS

Review into the Use of Total Factor Productivity for the Determination of Prices and Revenues

31 JULY 2009

ENERGEX LIMITED
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1. EXECUTIVE SUMMARY

ENERGEX Limited (ENERGEX) welcomes the opportunity to respond to the Australian Energy Market Commission's (AEMC) commissioned reports by the Brattle Group (BG) and Economic Insights (EI) on specific issues regarding the use of total factor productivity (TFP) for the determination of prices and revenues.

ENERGEX considers that the main findings of the AEMC commissioned reports provide strong support for our view that TFP, as proposed by the Victorian Minister for Energy and Resources, is not a satisfactory alternative form of regulation under the National Electricity Rules (the Rules) as it does not contribute to the achievement of the National Electricity Objective; that is the promotion of efficient investment in, and efficient operation and use of electricity services for the long term interests of consumers of electricity with respect to price, quality, safety, reliability and security.

In particular, EI's reports indicate that a number of material TFP methodological and data availability and consistency issues exist which have not been satisfactorily resolved. In addition, the BG report indicates that the relative incentive properties of building blocks and TFP (as per the Rule Change Proposal) are comparable.

As a result, the BG paper raises serious doubts about the purported increased incentives and dynamic efficiency benefits available under the TFP proposal (and as argued strongly by the Essential Services Commission (ESC) and Victorian Department of Primary Industries (VDPI) in their submissions to the AEMC's Framework and Issues Paper). This finding is significant because of the emphasis VDPI and ESC place on dynamic efficiency benefits under the TFP form of regulation approach.

ENERGEX also strongly disagrees with ESC's view that AEMC should consider whether the adoption of a TFP approach can create net benefits (additional consumer surplus plus additional profits less regulatory implementation costs) for a Distribution Network Service Provider (DNSP) that chooses this approach compared with the counterfactual of mandating exclusive reliance on building blocks.

Rather, the assessment of net benefits should relate to all DNSP. This is because while only a small number of DNSPs would likely choose the TFP option, all DNSPs are likely to be affected by its implementation, potentially adversely, because the TFP index will likely influence reset assessments under building block regulation, through its use as a benchmarking tool. Moreover, the construction of a national data base for TFP purposes will increase TFP implementation costs for all DNSPs in the National Electricity Market (NEM).

ENERGEX remains opposed to the introduction of a TFP based form of regulation, as outlined in our submission to the AEMC's Framework and Issues Paper. This is due to concerns about the impact of a range of unresolved methodological and data availability issues and the lack of a 'steady state' across the electricity distribution sector. ENERGEX considers that both the proposed TFP and the current building block regulatory approach place significant costs on DNSPs and that any regulatory reform should focus on shifting towards a lighter form of regulation. Recognising that there are deficiencies with the current building block approach, ENERGEX supports the

AEMC's intention to undertake an assessment of the advantages and disadvantages of the current building block approach.

In this regard, ENERGEX strongly supports the position of EI and the Australian Energy Regulator (AER) that the Victorian TFP data should not be used as the basis for regulatory pricing or revenue determinations under the Rules.

ENERGEX notes that the majority of stakeholder submissions to AEMC's Framework and Issues Paper appear to share our concerns about the implementation of TFP as a form of regulation.

2. INTRODUCTION

ENERGEX welcomes the opportunity to make this submission to the AEMC's *Review into the Use of Total Factor Productivity for the Determination of Prices and Revenues.*

The main purpose of this submission is to respond to the AEMC's commissioned expert reports by the BG and EI on specific issues regarding the use of TFP for the determination of prices and revenues.

This submission follows ENERGEX's February 2009 submission in response to the AEMC's Framework and Issues Paper. In that submission, ENERGEX recognised scope for improvement in building block regulation. However, ENERGEX expressed concern that due to a range of unresolved methodological and data availability issues and the lack of a 'steady state' across the electricity distribution sector, it would be premature to introduce a TFP based form of regulation under the Rules.

ENERGEX also indicated its opposition to the imposition of a requirement for DNSPs to populate a national TFP data base without a clear and demonstrated need.

2.1 AEMC's Revised Statement of Approach

The AEMC's Revised Statement of Approach Paper provides responses to issues raised by stakeholders in response to the AEMC's Framework and Issues Paper.

In this regard, ENERGEX welcomes the AEMC's decision to identify the deficiencies of the building block approach as part of establishing whether a TFP methodology would, better contribute to the achievement of the national electricity and gas objectives and be consistent with the revenue and pricing principles under the Rules.

While ENERGEX is disappointed that the AEMC has decided not to extend the scope of its TFP review to other possible regulatory methodologies, ENERGEX takes comfort from the AEMC's acknowledgement that TFP is not necessarily the only, or most suitable response to any identified building block deficiencies.

ENERGEX also supports the AEMC's view that its TFP review may also identify incremental improvements that could be made to the building block form of regulation to improve its operation. In ENERGEX's view, incremental improvements in the current building block approach are likely to be achievable in the absence of a TFP approach being incorporated in the Rules.

Finally, ENERGEX supports the AEMC's intention to undertake additional work to understand the ability of the TFP methodology to manage increasing and increased capital expenditures. Given

ENERGEX's and other DNSPs significant expected capital expenditure requirements in the short to medium term, this is a critical issue that has not been adequately addressed by VDPI or the ESC in their submissions to AEMC on the TFP issue.

It appears that the majority of submissions to the AEMC's Framework and Issues Paper have varying degrees of concern about implementation of TFP as a form of regulation. This is also consistent with stakeholders' views expressed in response to the original TFP Rule Change proposal. ENERGEX continues to challenge whether the TFP Rule Change proposal will contribute to achievement of the NEO in promoting efficient investment in, and efficient operation and use of electricity services in the long term interests of consumers with respect to price, quality, safety, reliability and security.

The remainder of this submission is structured as follows:

- Part 3 provides high level comments on each of the following three AEMC commissioned reports;
  - EI – Assessment of Data Currently Available to Support TFP based Network Regulation (9 June 2009);
  - EI – Energy Network TFP Sensitivity Analysis (9 June 2009); and
  - The BG – Incentives Under TFP Based and Building Block type Price Controls (June 2006);
- Part 4 briefly responds to certain issues raised in stakeholder submissions to the AEMC's Framework and Issues Paper; and
- Part 5 provides a conclusion.

3. COMMENTS ON AEMC COMMISSIONED PAPERS

3.1 Response to EI's Report on Data Availability

ENERGEX supports the majority of the report's findings.

In ENERGEX's view, EI's key finding is that currently available regulatory data in Australia is not sufficiently robust to support TFP analysis of the rigour required to be the primary determinant of regulatory pricing and revenue determinations. This is contrary to ESC's view that the existing Victorian TFP data is sufficiently robust for this purpose.

In terms of currently available TFP data in Australia, the paper notes that:

- the extent, quality, uniformity and continuity of currently available historical regulatory data vary greatly between jurisdictions over time; and
- regulatory data consistency is also very variable.

The EI's report also expresses support for the AER's view that it is unwise to 'lock-in' a TFP specification on the basis of currently available data as this is likely to be at the expense of accuracy and robustness.

ENERGEX strongly agrees with this view on the grounds that the introduction of TFP as a form of regulation for electricity distribution, even on an 'opt in' basis as proposed, will affect all distributors as TFP based regulation will potentially be used as a form of benchmarking applied to distributors remaining under the building block form of regulation. ENERGEX noted in its February 2009 submission that data integrity is paramount to the successful adoption of an effective TFP framework.

The EI's report concludes that consultation with stakeholders should commence on the variables required for TFP analysis and a detailed definition for a robust national TFP database. EI notes that this will take time and supports paper trials to compare price/revenue impacts of TFP and building block regulation.

ENERGEX agrees that more work is required to develop a robust TFP index that could be considered as a form of regulation option in Australia. However, contrary to EI's view, ENERGEX remains concerned that populating a national TFP data base is likely to be administratively onerous and impose additional compliance costs on the energy network sector.

3.2 Response to EI's Report on TFP Sensitivity Analysis

ENERGEX supports the majority of the Report's findings.

The key finding is that TFP analyses of Australian energy distribution systems will be relatively sensitive to:

- the output and input specifications chosen;
- the time period examined; and
- the method used to calculate growth rates.

Given the importance of the right specification of the TFP formula, it is a concern that there seems to be differences between EI and the Pacific Economics Group on TFP formula specification. This seems to be the case, in particular, for the way:

- outputs are measured and whether system capacity is included;
- output quantities are weighted to form a total output index; and
- capital input quantities are measured.

As outlined in the EI's report on TFP data requirements, it is apparent that much work needs to be undertaken in developing a TFP specification that would be broadly supported by stakeholders. In ENERGEX's view, the New Zealand experience with TFP regulation has highlighted several conceptual and practical measurement issues that need to be addressed in order for TFP to be a workable regulatory model.

Overall, the EI's report findings suggest that the Victorian TFP methodology is not a suitable basis for a national TFP scheme for electricity distributors, even on an 'opt in' basis. This finding is consistent with Ministerial Council on Energy's intent for nationally consistent energy network regulation, including the transfer of economic regulation from jurisdictional regulators to the AER.

In this regard, ENERGEX notes ESC's view that data problems under existing building block regulation have not prevented its ongoing implementation. However, the key difference under building blocks regulation is that the affected distributor is able to present its own data and the AER's resulting revenue/price determination will predominantly reflect that data. This clearly presents lower risk for a distributor than a TFP data base and formula driving the revenue/price determination, particularly when it appears that the TFP formula will be relatively sensitive to its specification.

3.3 Response to the BG paper – Incentives under TFP & Building Blocks

ENERGEX supports the majority of the BG's findings.

The key finding appears to be that cost and investment incentives under building block and the proposed VDPI TFP forms of regulation are comparable.

In addition, the report notes that the strength of cost control incentive can be varied either by changing the length of the regulatory control period or by adjusting the efficiency benefit scheme under both the TFP or building block regulation. This finding is consistent with the view of the Expert Panel on Energy Access Pricing on this issue:

> There is no basis for concluding that one approach has intrinsically stronger or weaker efficiency incentives than the other – this depends on the detailed parameters adopted under any particular application of either model.

In relation to investment incentives, the BG concludes that the building block form of regulation does not provide a significant incentive to expand the regulatory asset base (RAB) even if the regulator is systematically generous in its cost of capital estimate, because the change is relatively small compared to the magnitude of other factors influencing the firm's investment decisions, including security/reliability/service quality obligations.

In relation to service quality, the BG finds that it is difficult to see how a TFP method could successfully address step changes in costs when service standards change over time. More generally, in its view, the way the TFP method accommodates service quality is problematic because the relationship between service quality and cost drivers is not strong.

Given its responsibility for a rapidly growing network requiring sustained high levels of investment, as well as having increasingly more onerous legislated reliability/service quality obligations, ENERGEX strongly concurs with BGs' views.

ENERGEX's own experience is that significant expenditure can be incurred to improve service standards. However, the benefits can accrue with a lag, or may not be as large as expected given the uncertain relationship between expenditure and measured service quality outcomes. More generally, ENERGEX is concerned that there appears to be inherent difficulty in adjusting outputs to reflect changes in service quality under TFP regulation.

Another important point raised in the BG report, and in accordance with ENERGEX's view, is that gaming incentives under building block regulation, in particular the exploitation of information asymmetries between regulated firms and regulator, would not be addressed by the TFP proposal.

In fact, by allowing a DNSP the option to elect building block or TFP regulation, a new set of gaming incentives would be introduced. As a result, comments made by ESC and VDPI in their submissions about lower regulatory costs under the TFP approach are questionable.

Finally, in its report, the BG supports the use of TFP as an input for determining the value of X and components of a building block control. The BG also query the concerns raised about the additional compliance burden of providing TFP data and states that the true cost is likely to be small. In ENERGEX's view, it will not be clear how onerous information requirements will be until TFP information requirements are established (if they ultimately are).

More generally, as noted in our February 2009 submission, ENERGEX would oppose any imposition of a requirement for DNSPs to populate a national database, regardless of whether they are subject to TFP based regulation, unless a clear and demonstrated need could be established.

The BG report findings lend support to ENERGEX's view that the TFP Rule Change proposal is unlikely to contribute to the achievement of the NEO given that there appears to be no clearly identified benefits with respect to reliability, service quality and savings for consumers. ENERGEX does not believe that the proposed TFP rule change meets the criteria identified by the AEMC to determine whether the TFP methodology would contribute to the NEO; that is minimisation of the costs and risks of regulation (criteria four as per the Framework and Issues Paper). ENERGEX considers the requirements and costs placed on DNSPs to support the proposed TFP methodology would be greater if DNSPs were required to provide TFP data in addition to existing building block approach data. ENERGEX supports regulatory reform that focuses on shifting to a more light-handed approach which minimises costs.

4. STAKEHOLDER SUBMISSIONS TO AEMC'S FRAMEWORK AND ISSUES PAPER

ENERGEX notes that a majority of submissions do not support VDPI/ESC's TFP methodology as a form of regulation option under the Rules and/or raise major concerns about its possible implementation.

ENERGEX does not wish to make extensive comments in response to other stakeholder submissions to the AEMC, recognising that this is appropriately the role of the AEMC. However, ENERGEX would like to respond to certain views expressed in ESC/VDPIs' submissions which raise specific concerns due to their apparent downplaying of risks associated with implementation of the TFP methodology and/or over-emphasising the limitations of the building block methodology.

4.1 Efficiency benefits of TFP

ESC argues that because TFP based regulation is potentially more light-handed and creates stronger performance incentives, the objectives of dynamic and allocative efficiency will be promoted more effectively by TFP based regulation than the building block approach. ESC's argument appears to depend on the view that because regulated prices do not depend directly on allocated costs or revenues, DNSPs will have a strong incentive to use their assets and expertise to generate revenues in related markets.

Moreover ESC notes that the fundamental issue with building block regulation is that it does not create sufficient incentives for network service providers to encourage efficiency on the demand side of the energy marketplace. In particular:

- as cost-based regulatory systems become more mature, networks have little incentive to reduce capital expenditures and are rewarded when RAB increases; and
- there is not much to gain from actions that reduce the RAB, such as effective demand response (in particular, distributed generation investment), or take other actions that defer or reduce the need for network capital expenditure.

Similarly, VDPI argues that TFP provides greater flexibility to integrate and pursue demand management initiatives.

ENERGEX fully supports the promotion of dynamic efficiency as part of economic regulatory frameworks. ENERGEX is working on a range of demand management projects directed at reducing maximum demand growth on its network and consequently reducing the need for demand-driven network investment.

However, ENERGEX considers that ESC's (and VDPI's) criticisms of building block regulation are highly simplistic. In practice, the decisions of electricity distributors to pursue non-network alternatives, such as distributed generation, are affected by security/reliability obligations, ring-fencing requirements (including cost allocations approved by the regulator) and the treatment of unregulated revenues earned from use of regulated assets. In addition, the rate of growth of network maximum demand combined with security/reliability obligations can affect the cost effectiveness of distributed generation options relative to network investment options.

ENERGEX also considers that the incentives to reduce network demand are likely to be weaker under the price cap form of regulation (compared to revenue cap regulation) regardless of whether the price cap is derived under building block or TFP regulation. ESC appears to overlook this issue in promoting the demand management properties of TFP regulation.

As noted in section 3.3, the BG report concludes that there is little to differentiate the building block and TFP approaches with regards to investment incentives. However the BG report notes the building block approach is more responsive to changes in quality requirements due to its forward looking nature (ie firms would seek higher prices in anticipation of having to meet new quality requirements).

Finally, ENERGEX queries ESC's view that by de-linking a DNSP's costs from its regulated prices or revenues, incentives to pursue opportunities in competitive markets will be created. This appears to be based on a presumption that limitations imposed by regulation on DNSPs' pursuit of opportunities in competitive markets are significantly mitigated. In ENERGEX's view, this change in regulatory philosophy could be effected just as easily under building block regulation as TFP regulation.

Overall, ENERGEX considers that ESC's presentation of the TFP form of regulation as the solution to resolving a range of emerging distributed and demand management issues on energy networks, as being unsubstantiated and potentially significantly misleading.

4.2 Forecast versus actual costs

The ESC criticises the current building block model for the following information-related disadvantages, arguing that TFP based regulation could at least partly mitigate these disadvantages:

- projecting future costs is an information-intensive and inherently uncertain process that is fraught with risks such as:
  - overcompensating regulated businesses, thereby leading to excessive prices and profits, distorted infrastructure investment and misallocated resources in upstream and downstream markets;
    - overcompensation is exacerbated by the fact that firms have incentives to "game" the cost forecasts that are used to determine their forward-looking revenues;
  - providing inadequate prices and revenues for regulated businesses, undermining their financial viability and incentive and capacity to invest;
  - efficiency carryover mechanisms accentuate companies' incentives to game their cost forecasts; and
  - information asymmetry makes it difficult for regulators to detect such gaming.

ENERGEX believes that the issue of information asymmetry is to some extent mitigated by having a consistent regulatory approach, including the introduction of a single national energy regulator, the AER. The AER is well placed in this role, including its significant information gathering powers, to gain knowledge under the building block approach as to the reasonableness of expenditure proposals.

Similarly, VDPI argues that under TFP, regulated businesses will have greater certainty in recovering costs assuming effective investment practices. In addition, the TFP approach reduces uncertainty associated with data since it uses known and measurable historical data instead of firm-specific forecasts.

In ENERGEX's view, ESC/VDPI makes an implicit assumption that the errors in using historical industry-wide TFP performance as an indicator of TFP performance for the forthcoming regulatory period are less than, or at least not substantially greater than, the errors in forecasting firm-specific expenditure and demand. However, TFP measures can vary substantially between periods even where those periods are measured between two equivalent points (e.g. peak to peak). Changes in capacity utilisation, mis-measurement of quality change, and changes in environmental factors (e.g. regulatory or industry policies) are important sources of variation.

In this environment ENERGEX considers that the risk raised by ESC, of building block regulation resulting in inadequate prices and revenues undermining regulated businesses' financial viability and incentive and capacity to invest, is far less than under TFP regulation given costs and revenue are de-linked under the latter approach.

ESC's position that a capital investment module will be able to address step changes in capital expenditure across regulatory periods provides minimal comfort. Large variations to capital

investment plans presents problems for the TFP approach because it results in a substantial increase in inputs in the regulatory period, but not an equivalent increase in outputs where the capacity made available by large fixed investments is not, in the short term, utilised at the same rate as the average of the firm's existing capital. Differences in capacity utilisation between new investments and the existing stock of investments have the effect of shifting TFP performance across regulatory periods. It is not clear to ENERGEX how the proposed capital expenditure module will address this issue.

More generally, ESC seems to downplay the significance of this issue, noting that forecast step changes in expenditure requirements across regulatory periods are often not subsequently reflected in practice. ENERGEX's own experience over the past decade is directly contrary to ESC's view and we believe our experience is not unique across NEM jurisdictions.

4.3 Lack of a 'Steady-State'

As noted in our February 2009 submission, ENERGEX does not support the application of a TFP methodology until such time as industry has achieved a 'steady-state'. This is due to the unknown potential impact of Government climate-related policies, such as the Carbon Pollution Reduction Scheme, as well as ENERGEX's significant forecast asset renewal and replacement program.

In contrast, ESC has argued that concerns whether network industries are in a steady-state and whether TFP based regulation can accommodate differences in costs across companies are over-stated for the following reasons:

- it is not necessary for the industry to be in a steady-state for TFP based regulation to be applied because the relevant issue is simply whether long run historical TFP trends are a reasonable basis to use for setting future prices; and
- differences in business conditions impact networks' cost and price levels rather than their TFP growth, and these conditions will appropriately be reflected in individual company prices at the outset of a TFP based regime.

In ENERGEX's view, the critical assumption under a TFP form of regulation is that past performance is a reasonable indicator of future performance. As noted above, ENERGEX does not believe that the electricity distribution sector in Australia, and certainly not in Queensland, is facing a situation where historical performance is a good guide to future performance. As a result, the TFP form of regulation poses additional material risks for ENERGEX and other distributors.

A number of submissions to the AEMC's Framework and Issues Paper, noted that TFP assumes past industry performance is representative of future industry performance. However, the introduction of advanced metering and smart networks as well as government policy with respect to climate change over the next regulatory period demonstrates the risks in making this assumption.

It appears that ESC's main response to these concerns is to rely on a capital investment module to address this issue. ENERGEX's concerns about this module approach were noted in the previous section.

In ENERGEX's view, regardless of whether differences in business conditions can be reflected in prices at the outset of a TFP regime, underlying the TFP approach is the assumption that the bulk of firms can be characterised as having expected productivity performance over the coming regulatory period similar to the recent and historic industry-wide average. However, industry productivity data from the Australian System of National Accounts shows that period-to-period productivity growth rates are highly variable. It could be expected that variation at lower levels of industry aggregation would be even greater. There can also be substantial deviations from long run trend growth rates. EI's report on the sensitivity of the TFP formula specification is consistent with this view.

5. CONCLUSION

Given the findings of the AEMC commissioned reports and stakeholder submissions to the AEMC's Framework and Issues Paper, it does not appear that the TFP Rule Change proposal is likely to meet the NEO as the adoption of the TFP approach is unlikely to deliver improved cost, investment or service quality outcomes.

While it appears superficially innocuous (as it offers distributors a choice of how they will be regulated), its adoption will result in more than one regulatory approach applying to network businesses, in contradiction of the express intent of recent regulatory reforms to achieve harmonisation in regulatory arrangements across Australia.

In addition, ENERGEX is particularly concerned that a number of the purported benefits of TFP stated by VDPI and ESC in their submission to the AEMC are simplistic at best and should be subject to much greater scrutiny.

As a result, the focus of AEMC's TFP Review appears best re-focussed from the TFP Rule Change proposal to the issues addressed in the EI and BG reports. In ENERGEX's view, a clear and demonstrated need for the implementation of a TFP form of regulation in an Australian context has yet to be established. Moreover, ENERGEX considers that incremental improvements in the current building block approach are likely to be achievable in the absence of a TFP approach being incorporated into the Rules.