Government of South Australia
Department for Manufacturing, Innovation, Trade, Resources and Energy

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Mr John Pierce
Chairman
Australian Energy Market Commission
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Dear Mr Pierce,

Thank you for the opportunity to provide comment on the Australian Energy Market Commission's (AEMC) Approach Paper 'Energy Market Arrangements for Electric and Natural Gas Vehicles'.

The Resources and Energy Division does not offer a view on the appropriateness of Electric Vehicles (EVs) and Natural Gas Vehicles (NGVs) from a transport perspective. Rather, our concerns lie with ensuring the uptake of these vehicles does not affect the security and integrity of the electricity grid and gas network.

The Resources and Energy Division agrees with the AEMC that the uptake of EV and NGVs is likely to be driven through ongoing global concerns with climate change and the environment, although we note the strength of this driver may differ between nations. We also note however, that South Australia's Low Emission Vehicle Strategy (LEVS) is currently under development and it notes that energy security concerns as well as rising prices of conventional fuels are factors driving global advances in low emission technologies.

Despite these drivers, the Resources and Energy Division considers that the current high upfront costs of EVs and NGVs, the development of more fuel efficient conventional vehicles and the limited range of EVs at present may result in a slow uptake of these vehicles. South Australia has not identified any regulatory barrier impacting the uptake of EVs and NGVs whilst developing the LEVS.

Once a more rapid uptake of vehicles is forecast in Australia, the Resources and Energy Division considers that it will be important to ensure that their presence can be managed to avoid compromising the National Electricity and

Gas Objective. In this regard, we note that if a rapid and widespread uptake of such vehicles does occur, then there will be an impact on electricity and gas markets.

With respect to Electric Vehicles (EVs), of primary concern are the re-charging habits of vehicle owners. While the AEMC have indicated most residential and public charging will occur at power levels between 1kW to 19.2kW, South Australia's own learnings from our LEVS indicate that there are three emerging charging levels for EVs corresponding to 3.6kW (Level 1), 7.2kW (Level 2) and 62.5kW (Level 3). The potential impact that EV recharging could have on electricity demand could therefore be more significant than the AEMC has outlined. It is of particular relevance to South Australia given we have the peakiest demand profile of any state in Australia which, at times, can be nearly double the average demand. Peak demand in South Australia generally occurs in the afternoon on very hot days, when households are running their air conditioners and other household appliances at the same time. These periods are likely to coincide with times where owners will seek to recharge their cars which will compound the State's current peak demand challenge. Without appropriate planning the large-scale adoption of electric vehicles would add additional demand for load during these periods which may lead to increased peak generation costs and network costs to accommodate the extra load.

We note that the current electricity market tends to provide customers with a poor indicator of their contribution to peak demand on the electricity network with a large degree of cross-subsidisation of prices between customer classes. It is therefore important that the AEMC consider how to incentivise the bulk of recharging into off-peak periods. The Resources and Energy Division considers that areas which could be explored by the AEMC may include innovative charging regimes which motivate an end-use customer to change their charging behaviour or the implementation of a Demand Side Management (DSM) programs which would allow the electricity utility to directly influence the load profile. Furthermore, the Resources and Energy Division considers that the development of smart grids may be an enabler of more innovative solutions. The AEMC Power of Choice Review would appear to be the appropriate forum for ensuring these issues are considered in a holistic integrated manner.

In regards to NGVs, the Resources and Energy Division recognises that vehicles operating on natural gas can offer significant emissions reduction savings over vehicles operating on conventional liquid fuels. However, augmenting infrastructure and distribution systems to enable refuelling to be undertaken quickly and easily may be a challenge for the industry.

The Resources and Energy Division has not analysed the impact of a large uptake of NGVs on gas supply and price, however, we note that the nation's gas reserves offer a strong basis from which to meet the challenge and understand that research into development of unconventional gas sources has the potential to further increase these reserves.

In conclusion, the Resources and Energy Division welcomes the AEMC's Approach paper and looks forward to the outcomes. Should you wish to discuss this submission please contact Ms Rebecca Knights, Director Energy Markets, Resources and Energy Division on (08) 8204 1715.

Yours sincerely,

Vince Duffy
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RESOURCES AND ENERGY DIVISION

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