

## The value and price of microgenerated solar – how do we design a fair and sustainable price for electricity generated by microgeneration solar PV?

Address at Solar Summit 2 – 1 July 2011

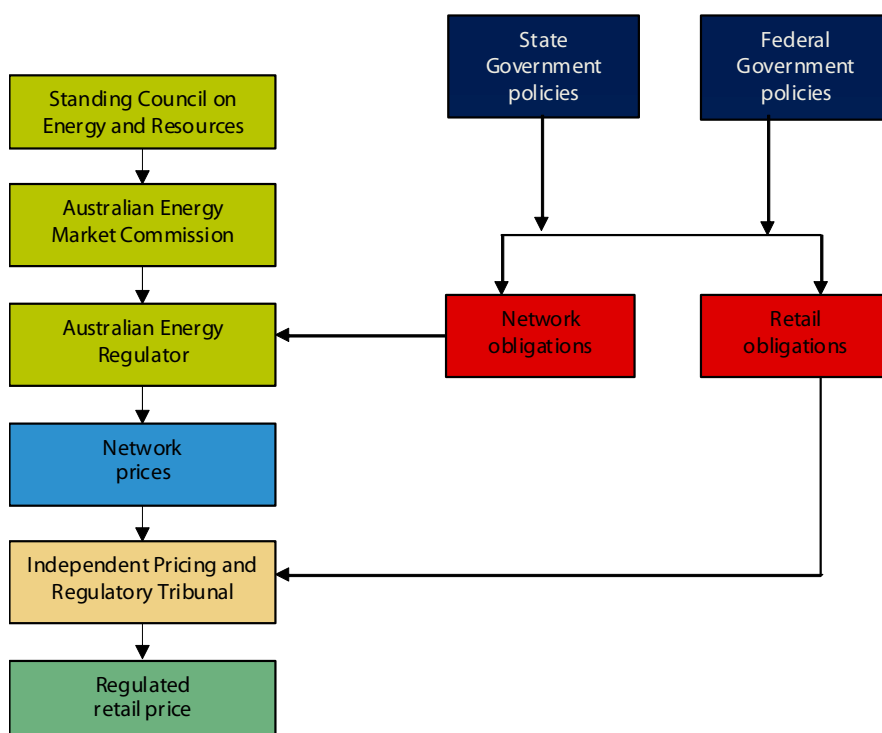
Jim Cox, PSM, Acting Chairman

IPART is responsible for setting the regulated electricity prices for around two thirds of residential and small business customers in NSW. These are the prices that the Standard Retailers – EnergyAustralia, Country Energy and Integral Energy charge customers who have not signed a market contract with either with them or another retailer. These are the brand names used by the new owners of the Standard Retailers, TRUenergy and Origin Energy.

IPART sets prices to recover the costs incurred by Standard Retailers in serving small customers.

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### Slide 1 IPART's role in setting regulated prices



The largest cost component is network charges, which are the costs of transporting electricity from generators to homes and businesses across the wires. These costs, which are around half the end price, are set by the Australian Energy Regulator, who regulates in accordance with the National Electricity Rules. These Rules are set by

the Australian Energy Market Commission. In turn, the Australian Energy Market Commission provides advice to the Standing Council on Energy and Resources (formerly the Ministerial Council on Energy) and operates under the National Electricity Law.

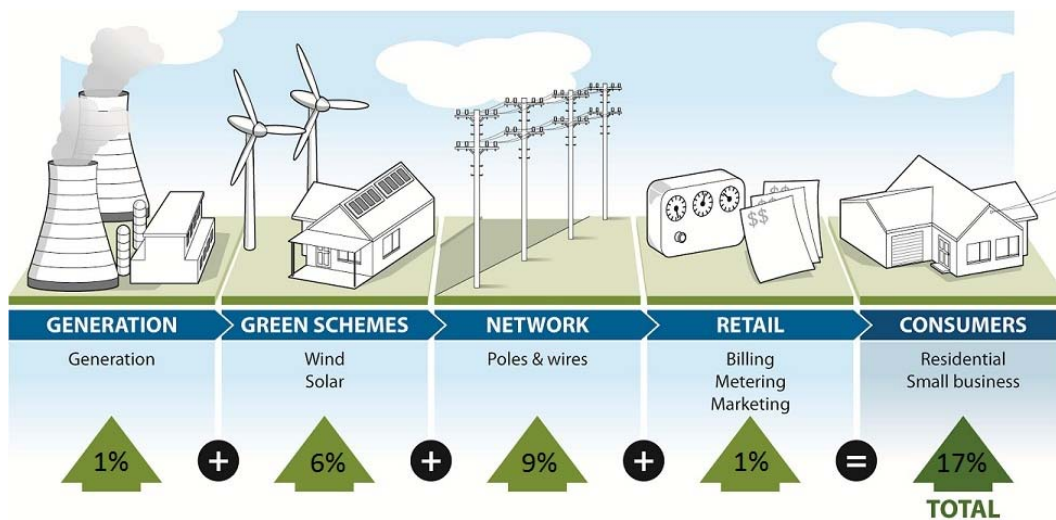
The next largest cost component is energy costs. The wholesale energy market is not subject to economic regulation, but is operated by the Australian Energy Market Operator in accordance with the Rules.

Both State and Federal Governments can impose obligations on network and retail businesses. An example is the Federal Government’s Renewable Energy Target, which places obligations on retailers. Another example is the reliability standard imposed on the network businesses by the NSW Government.

After considering the costs of running the business, buying and transporting electricity and meeting all obligations, we set the final retail price that is paid by regulated customers.

In practice, this means that we have had to deliver the bad news of significant electricity price increases in recent years.

**Slide 2 1 July 2011 price increases – the drivers**



After a consultative process, we have determined that regulated electricity prices in NSW will increase by an average of 17% today. This increase follows previous large increases, with electricity prices increasing by 59% in real terms over the past 5 years.

Without factoring in a carbon price, we estimate that prices will increase further on 1 July 2012 – by between 2% and 10%, depending on the area.

Today's price increase is large and is not welcomed by the Tribunal. It reflects 2 main cost drivers:

- ▼ Network charges, reflecting the costs of transporting electricity from the generators to houses and businesses. This has added 9 percentage points to retail prices.
- ▼ Increasing costs of meeting the Federal Government's changes to its Renewable Energy Target, which has added 6 percentage points to retail prices.

We have made a range of recommendations aimed at ensuring that electricity prices do not reflect inappropriate policy settings relating to network costs and the costs of complying with green schemes.

In relation to network charges, we recommended action to limit future increases in network costs to more appropriate levels by reviewing key aspects of the regulatory framework, including the National Electricity Rules and the standards under the NSW licence conditions.

In relation to green schemes, we recommended action to limit future increases in green scheme costs by ensuring that only the most cost-effective options are adopted in the future, and improving the cost-effectiveness of existing schemes.

We are very pleased that the State and Federal Governments have responded to a number of our recommendations.

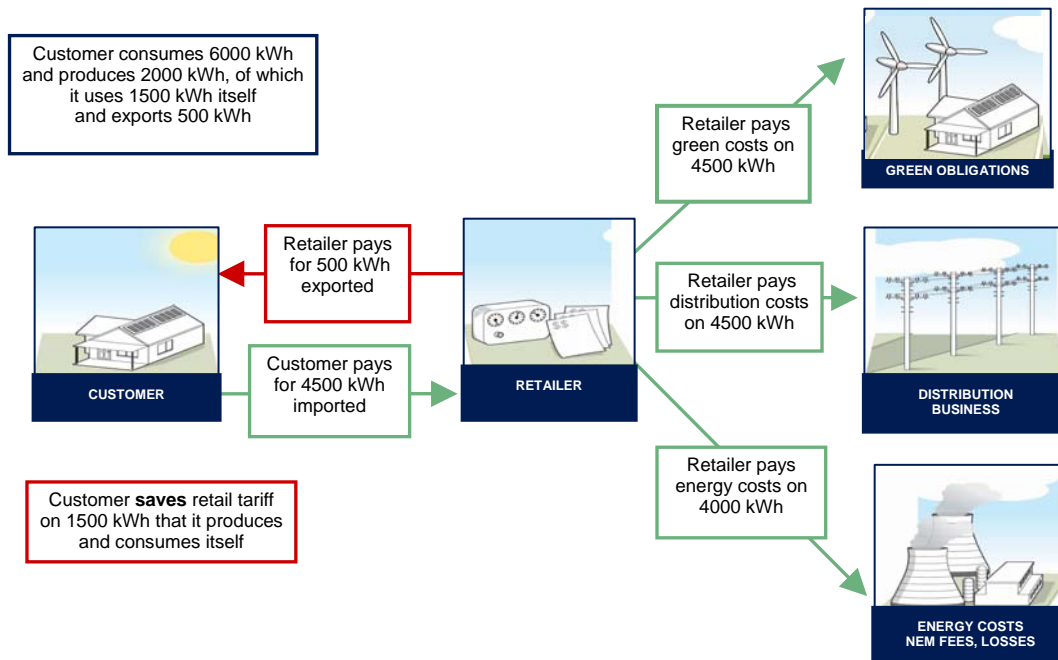
The combination of generous subsidies from both Federal Government (through its RET scheme) and State Governments (through subsidized feed in tariffs) has encouraged the installation of a large number of solar PV units, with over 270 MW of capacity installed under the NSW Solar Bonus scheme alone.

The costs of these subsidies will need to be recovered through electricity prices or borne by taxpayers.

Changes to the RET scheme on 1 January 2011 have contributed 6 percentage points to today's price increase. This represents a fourfold increase in green costs. The changes include splitting the RET scheme into small scale and large scale schemes and uncapping the small scale scheme.

However, today's price increase does not include recovery of the costs of the Solar Bonus Scheme. The Government has proposed to offset the costs of the Solar Bonus Scheme for 2011/12 against uncommitted funds in the Climate Change Fund.

Slide 3 Financial flows – net metering



This session addresses designing a fair and sustainable price for electricity generated by future investment in small scale solar PV. The Fact Sheet distributed for this session suggests that this fair price should not impose any further costs on customers or on the NSW budget. This implies that the feed-in price should be subsidy-free.

Nevertheless, when installing a PV unit, a customer can access a subsidy under the Renewable Energy Target. This subsidy, which is paid up-front, represents the renewable energy generated by the unit over 15 years. Currently renewable energy generated by solar PV attracts a higher level of subsidy than other forms of renewable energy due to the solar credits multiplier. Therefore, even in the absence of a subsidised feed in tariff, subsidies granted to solar PV exceed subsidies for other forms of renewable energy.

There are different sorts of metering arrangements for solar PV installations. The vast majority of existing Solar Bonus Scheme participants are on gross metering arrangement. This means that they earn the subsidised feed in tariffs on all energy produced by their PV unit.

Under net metering arrangements, the energy produced by a PV unit will first be used in the house, if required. If, at any point in time, there is more energy being produced than consumed, that amount of energy will be exported to the grid, attracting the feed in tariff.

In both gross and net metering arrangements, energy will be drawn from the grid when it is required and exported to the grid when available. Therefore, the grid is critical to customers with PV installations.

If the feed in tariff is lower than the retail rates (which it will be in the absence of a subsidy), customers will be better off on net metering arrangements, effectively saving the retail tariff for the electricity generated that they consume within their own house. If at any point in time there is excess generation, it is exported to the grid.

Most states in Australia offer feed in tariffs on a net metering basis.

For customers with net metering arrangements, any energy produced by its panels will first be used in the house, if it is required at that point in time. The customer will effectively avoid paying the retail price for this electricity. For the energy that it produces and uses, the customer earns a 1:1 tariff by saving the retail price.

However, at some points during the day the household might produce more than it uses. In these times, the electricity is fed back into the grid. Unless they pay households for the energy that they export to the grid, the retailers will make a financial gain because they effectively earn the retail price on this energy (because of the metering and billing arrangements), but pay network charges and the costs of meeting green obligations. This suggests that a subsidy free price could be determined by taking the retail price of energy and subtracting from it the network and green cost and other costs that the retailer does not avoid when households produce energy for export to the grid.<sup>1</sup>

On electricity exported, retailer saves the other components of the retail bill, including the energy costs, NEM fees and losses.

A fair and sustainable feed in tariff could be set to ensure that retailers pass this benefit back to those customers who are producing the electricity.

Let's say, for example, a household consumes 6000 kWh and produces 2000 kWh in a year. Of this 2000 kWh, it consumes 1500 kWh itself and exports 500 kWh. The retailer will collect the retail tariff on 4500 kWh from the customer and pay the distributor and green obligations based on 4500 kWh. However, it will only need to pay for 4000 kWh of generation, losses, NEM fees, etc.

Therefore, for energy generated, the retailer effectively collects the retail price but only pays out the network costs and green obligations.

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<sup>1</sup> An alternative is to value the energy fed back into the grid at the spot price of electricity at that time.

Setting the feed in rate for new customers on net metering arrangements would require estimating the benefit to the retailer by analysing the production and consumption profiles of customers with solar PV and examining the retail and network price components. Some important policy questions would need to be considered, including whether a regulated price should be set or whether a benchmark amount should be established. If a regulated price is set should it apply to all retailers or Standard Retailers? And how would this price be updated through time? Alternatively, customers might be able to rely on the market to deliver the benefit to customers in the same way that they currently offer premiums to the feed in tariff for Solar Bonus Scheme participants.

In our recent report we recommended that the Government require the retailers to redistribute the financial benefit that they gain from Solar Bonus Scheme participants to the NSW Government to help cover the costs of the scheme. The fair and reasonable price that we have discussed could also be used in determining the amount that retailers should redistribute to the NSW Government to reduce the costs of the Solar Bonus Scheme. Requiring retailers to make a contribution equal to the subsidy free PV feed in price would ease the pressure on electricity customers or taxpayers.

We believe that it is important to ensure that policy settings are right so that customers do not pay more than necessary for electricity and that taxpayers are not unnecessarily burdened. We look forward to debate on these issues.

Thank you