## Editorial

# True accounting

## high network costs make DE the better alternative

In a quiet Paris street, close to the River Seine and tucked away at the back of the Australian Embassy, is the office of the economic and energy modellers of the International Energy Agency (IEA). Their goal is to predict the world's energy future, and their projections are among the most influential in the world. Their World Energy Model is a powerful tool used by policymakers and the energy industry everywhere. The most recent modelling work includes for the first time some practical consideration of decentralized energy and CHP. This is just one example of the Model's continuous improvement and it is a good start. But there is still more scope for the Model to reflect current commercial and economic reality in its assessment of DE. More of that in a moment.

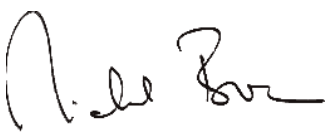
The latest volume of analysis and outputs is the IEA's *World Energy Outlook 2004* (*WEO*).[1] It is a treasure of data, statistics and projections – terrific reading. The IEA modellers have used two scenarios in its projections for the *2004 Outlook*. The first, the Reference Scenario, assumes no change in current energy and environmental policies (and therefore includes continuing dominance of central power in the power generation sector). Some of the highlights make sobering reading:

- electricity demand doubling by 2030
- gas use overtaking that of coal by 2015 and doubling by 2030
- developing countries accounting for two thirds of demand growth
- carbon emissions almost doubling by 2030 compared with 1990, the Kyoto Protocol base year.

The environmental and supply challenges facing the energy sector in 2005 look bad enough. On the basis of the Reference Scenario, we are in for a bleak future. Fortunately, there is little chance that this will come to pass. Policies are dynamic, not static, and in most countries we have already seen the gradual emergence of initiatives to improve efficiency and cut the carbon intensity of energy generation and use. Far too slow, but it is a start. This will not only continue, but will certainly accelerate. Hence, a new and alternative scenario of the IEA, neatly called the Alternative Scenario, makes projections on the basis of more sustainable policies that are currently under consideration or which could be expected over the next few years. Even here, carbon emissions increase 30% by 2030, but at least this scenario presents a much more plausible view of the future.

From a DE perspective, the IEA Model builds in significant growth of CHP in its Alternative Scenario. Nowhere near the economic potential, but it is something. The Model also spells out in stark terms the huge amount of T&D network investment required in the Reference Scenario: not only does the electricity sector account for 60% of all energy sector investment to 2030, but well over half of this is for the network only. In contrast, the Alternative Scenario, which includes more DE, shows much lower network investment.

It is this reduced requirement for network investment that gives DE a clear economic edge over central power. WADE's own modelling shows it clearly, and now the IEA Model appears to be leading to the exact same conclusion. Which makes it puzzling that the *WEO 2004* repeats the conventional – but wrong – view that central power provides the lowest-cost generation option. I believe the IEA could more usefully compare generation options by the cost of delivered electricity rather than generated electricity, so that network costs are included. This would give a quite different set of results. Perhaps such an analysis will be included in the *WEO* in 2006, when the Paris modellers bring us their next array of impressive projections.



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1. Available for order at www.iea.org