



KEY POLICY ISSUE

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THE IMPACT OF THE FINANCIAL CRISIS ON ENERGY INVESTMENT

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Introduction

Energy investment worldwide is plunging in the face of a tougher financing environment, weakening final demand for energy and falling cash flows – the result, primarily, of the global financial crisis and the worst recession since the Second World War. Reliable data on recent trends in capital spending and demand are still coming in, but there is clear evidence that energy investment in most regions and sectors will drop sharply in 2009. Preliminary data points to sharp falls in demand for energy, especially in the OECD, contributing to the decline in the international prices of oil, natural gas and coal.

Both supply and demand side investments are being affected. Energy companies are drilling fewer oil and gas wells and cutting back spending on refineries, pipelines and power stations. Many ongoing projects are being slowed and a number of planned projects have been postponed or cancelled – for lack of finance and/or because of downward revisions in expected profitability. Meanwhile, businesses and households are spending less on energy-using appliances, equipment and vehicles, with important knock-on effects for efficiency of energy use. Tighter credit and lower prices make investment in energy savings less attractive financially, while the economic crisis is encouraging end users to rein in spending across the board, as a defensive measure. This is delaying the deployment of a more efficient generation of equipment. Furthermore, equipment manufacturers are expected to reduce investment in research, development and commercialisation of more energy-efficient models, unless they are able to secure financial support from governments.

Impact by sector

In the oil and gas sector, there has been a steady stream of announcements of cutbacks in capital spending and project delays and cancellations, mainly as a result of lower prices and cash flow. We estimate that global upstream oil and gas investment budgets for 2009 have already been cut by around 21% compared with 2008 – a reduction of almost \$100 billion. This is a major concern as there is a clear need for an ongoing investment to meet new demand but more importantly to offset decline in production at individual fields. For instance, the IEA's World Energy Outlook 2008 found that even if global oil demand was to remain flat until 2030, some 45 mb/d of additional gross capacity — the equivalent of over four times the current capacity of Saudi Arabia — would need to be brought on stream simply to offset declining production at existing fields.

Power-sector investment is expected to be severely affected by financing difficulties, as well as by weak demand. We estimate that global electricity consumption could drop by as much as 3.5% in 2009 – the first annual contraction since the end of the Second World War. Weak demand growth is reducing the immediate need for new capacity additions. At the same time, borrowing has become more difficult and the cost of capital has risen markedly. If a recovery takes longer than expected, and energy prices remain at depressed levels relative to recent peaks, we would expect to see a shift to coal- and gas-fired plants at the expense of more capital-intensive options such as nuclear and renewables.

The outlook for investment in renewables-based power projects is mixed, depending on the policy framework, but is generally falling proportionately more than that in other types of generating capacity. We estimate that for 2009 as a whole investment in renewables could drop by as much as 38%, although stimulus provided by government fiscal packages can probably offset a small proportion of this decline. Investment in renewable energy assets surged in recent years, recording year-on-year growth of 85% in 2007. But activity slowed in 2008 as sources of finance contracted and lower fossil-fuel prices reduced the economic incentive for new investment, particularly in the last few months of the year. Preliminary data for the first quarter of 2009 indicates that the slump in investment has accelerated, with spending 42% lower than in the previous quarter. In most regions, investment in bio-refineries has all but dried up due to lower ethanol prices and scarce finance.

Industry surveys suggest investment in the coal sector could drop by 40% in 2009 compared to 2008. Nonetheless, this drop is from very high levels reached in 2007 and 2008, which were exceptionally profitable: coal companies used free cash flows to sharply increase their investments, as well as paying out large dividends to shareholders. Expected reductions in capital spending in 2009 are most marked among high-cost producers, especially those supplying export markets, such as in the United States and Russia.

Implications for energy security, climate change and energy poverty

Falling energy investment will have far-reaching and, depending on how governments respond, potentially grave effects on energy security, climate change and energy poverty. Cutbacks in investment in energy infrastructure will only affect capacity with a lag, often amounting to several years. So, in the near term at least, weaker demand is likely to result in an increase in spare or reserve production capacity. But there is a real danger that sustained lower investment in supply in the coming months and years, could lead to a shortage of capacity and another spike in energy prices in several years time, when the economy is on the road to recovery. The faster the recovery, the more likely that such a scenario will happen.

The impact on greenhouse-gas emissions will depend on how the crisis affects investment in different types of energy technology. In the short term, slower economic growth will curb growth in emissions. But, in the medium and longer-term, the crisis may lead to higher emissions, as weak fossil-energy prices and financing difficulties curb investment in clean energy technologies, increasing reliance on fossil-fuelled capacity. At the same time, investors will remain risk averse, so that funding for clean energy projects will be available primarily for proven technologies in attractive markets. Once the recession is over, the likely burst of economic growth or "catch-up effect" may also cancel out any short-term emissions benefit. There is also a very real risk that the world's preoccupation with dealing with the crisis will lessen the chance of reaching a comprehensive climate-change agreement in Copenhagen.

Cutbacks in energy investment will impede access by poor households to electricity and other forms of modern energy – a vital factor in pulling people out of poverty. There are an estimated 1.6 billion people worldwide still lacking access to electricity – most of them in sub-Saharan Africa and southern Asia. This figure may grow as a result of the crisis, as some of the households that previously had access are no longer able to afford to pay for the service and financial problems limit the ability of utilities to connect new customers.

The need for a policy response

These concerns justify government action to support investment in energy efficiency and clean energy. Many countries recognise this: a small but significant share of the additional public spending in short-term economic stimulus packages announced to date (about 5% of a total of \$2.6 trillion) is directed at energy efficiency and clean energy. These moves are a positive step in the right direction, potentially killing three birds with one stone: tackling climate change, enhancing energy security and combating the recession.

But much more needs to be done. The investment needed to put the world onto an energy path consistent with limiting the rise in global temperature to around 2°C far exceeds the additional investments that are expected to occur as a result of the stimulus packages so far announced. Our analysis suggests that, relative to their recent announcements, governments should be looking to increase the level of new funds they commit to energy efficiency and low-carbon energy policies by a factor of around four. And, at a minimum, this level of investment would have to be sustained each and every year for decades to come.

The IEA is therefore encouraging world leaders to push for a “Clean Energy New Deal” to exploit the opportunity the financial and economic crisis presents to effect a permanent shift to a long-term sustainable energy future. At the global level, this will mean striving for an energy mix that uses all options that are at our disposal simultaneously. We need to combine greater energy efficiency improvements with increased deployment of renewables and nuclear while seeking to minimise our dependence on oil, gas and coal. But even in such a scenario the future for the fossil fuel industry remains bright. It is not realistic to expect low-carbon technologies to replace fossil energy overnight.

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