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Energy Report:

"Investment Trends in Energy the Sector"

By

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Introduction:

For the third year in a row, the trend of declining investments in renewable energy sectors continues to reach $ 1.8 trillion in 2017, equivalent to 1.9% of world GDP. The biggest decline was in the electricity generation sector due to a decrease in the number of new power stations using coal, nuclear power or hydroelectric power. Given the continued high investment in solar panels, the decline in other sources of fuel was much greater.

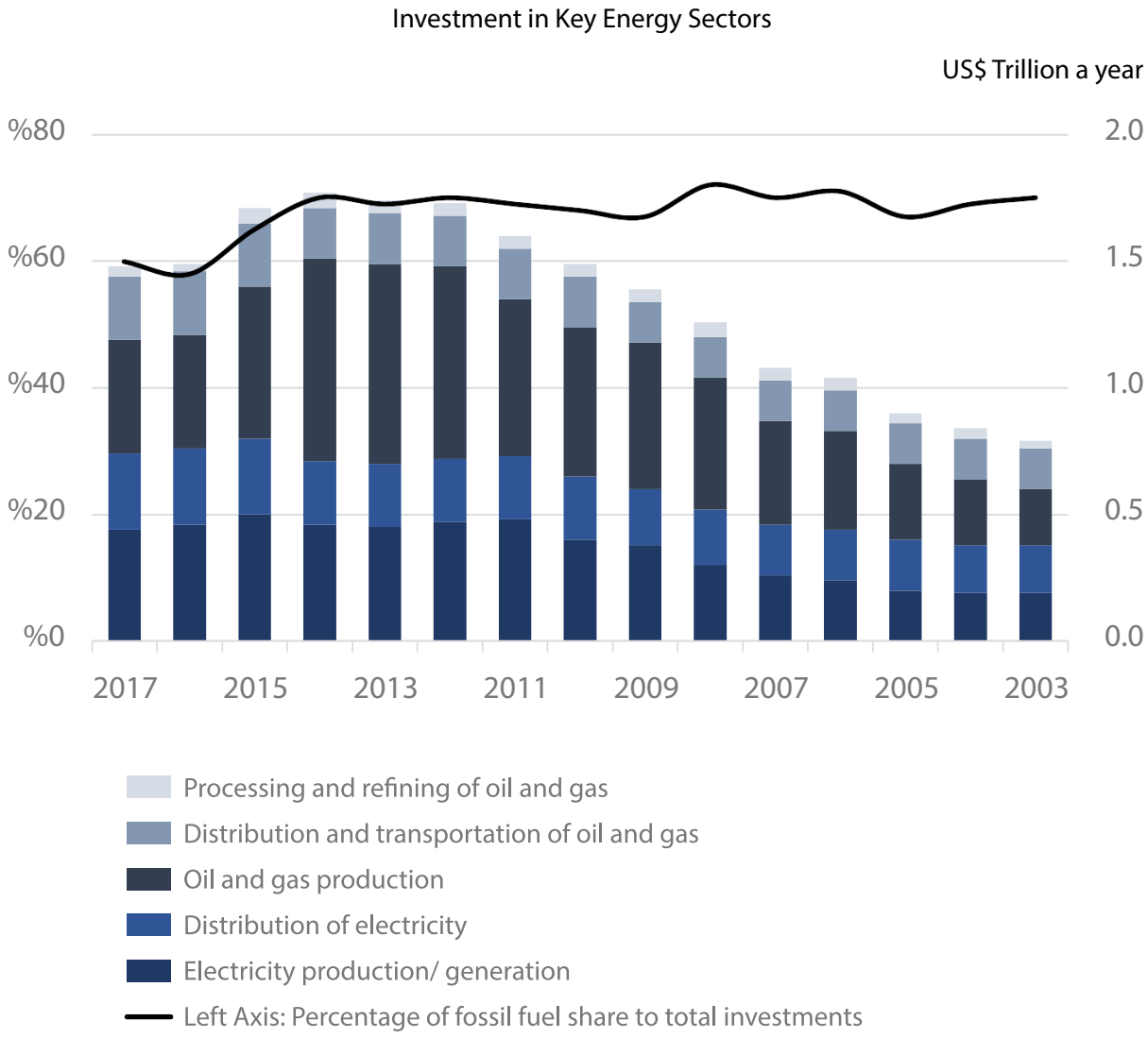

Figure 1 Source: International Energy Agency

As with regard to research and development in consumption efficiency and oil and gas extraction technologies, investments continued to rise during 2017. However, capital expenditures on fossil fuel production projects fell by one-third from their level in 2014. The electricity/ power sector continued to attract the highest percentage of total investment, which shows that investment policies continue to give priority to the expansion of electricity interconnection grids and renewable energy.

Impact of Prices and Costs on Investment Decisions:

The fall in costs has had a direct impact on the types of investment, prices and competitiveness of energy sources. For example, a 15% drop in solar panel prices led to an increase in its share of total energy investments in general to 8%. Furthermore, the improved expertise in the implementation of these projects, coupled to the decrease in the cost of solar panels, has led to a better ability in choosing economical sites for the implementation of such projects, taking advantage of the technical development of solar panels. The main reason for the proliferation of solar panels is the big size of projects implemented through government tenders. These projects benefit from the "economies of scale", and as such the bigger the project is, the lower unit cost of solar panels will be. For these reasons, the average size of solar panel projects had risen 4.5 folds over the past five years to 2017, compared to 0.5 times for wind turbine projects.

As for the oil and gas sector, the cost economics are more complex compared to solar panels. As a result of the controlling of expenditures by production companies and stabilization of costs by service companies, the cost of conventional oil and gas extraction projects remained stable even after oil prices have risen since mid-2016. However, in the US unconventional oil and gas sector, service costs have risen by 10% as exploration activities increased in 2017. Year 2018 is expected to see the same increase in service companies' costs, which will increase the financial pressures on exploration companies and limit the growth of investment in the unconventional oil and gas sector.

Destinations of Investments in Energy:

China continues to be the main destination for energy investment with a 21% share of the total global investments. China's investments are concentrated in networks and consumption efficiency projects, as well as in low-carbon electricity generation plants, while investments in coal-fired plants declined by 55% compared with an increase in investments in natural gas and renewable energy projects. The United States comes in second place, after China, as a result of the resumption of shale oil and gas exploration activities and the implementation of natural gas-fired power plants and transmission grid projects. European countries come in third place accounting for 14% of the world's total investments. European investments were mainly concentrated in consumption efficiency technologies with a slight increase in renewable energy projects.

Destination	Billion US$ (2017)
China	387
US	287
Europe	260
Middle East	111
World	1,802

Table 1 Source: International Energy Agency

Financing of Energy Projects and Government Role:

With the increase in oil prices and improved cost management, the financial means of oil and gas companies has improved significantly, enabling them to finance their projects from their own resources or obtain external financing with relatively low interest rates. The same applies to the electricity/ power generation sector, with renewable energy technologies becoming more mature and reliable. Renewable energy has proved itself to be a viable practical and economic investment not only in the United States and Europe but also in Asia, Latin America and Africa. Government financial institutions, such as development banks, have significantly contributed to the proliferation of renewable energy by reducing the risks to commercial banks that finance these projects. In Europe, for example, improved financing terms and conditions have contributed to a 15% reduction in the production costs of wind turbines over the past five years.

There was a marked increase in private sector investment in renewable energy. The private sector's share accounted for 75% of the total direct investment in renewable energy projects. The same applies to the energy efficiency sector, which is dominated by the private sector. However, in the past five years there has been a significant increase in investments by government-owned companies, as governments' share in investments in electricity production plants accounted for 55% of the total. Government-owned companies also dominate the investment in oil and gas, of course. The same applies to nuclear energy, as investment in this area is restricted to sovereign entities.

In developing countries, government companies participate in most of the projects for the construction of electricity production plants, with a view to reducing the risks to the rest of the partners and investors. Government companies also contribute more than 60% of the total spending on the development and expansion of electricity/ power grids. Furthermore, government companies have other roles to invest in energy, such as hydroelectric projects and energy efficiency of government buildings.

Certain investment sectors are becoming increasingly affected by government policies. In the electricity sector, more than 95% of investments are made by companies whose revenues are governed, in full or in part, by mechanisms enforced by governments to control prices. As for investments in electricity transmission grids, they also face government restrictions on tariffs/ rates in order to protect the end-consumer in particular and the retail markets in general. These low tariffs are an impediment to private sector investment because they have direct impact on the returns on investment in power transmission grids. Even in countries with advanced electricity supply markets, producers of electricity find it hard to make profits as a result of the intense competition in electricity prices within the wholesale markets of the power generation plants. As a result, private investments moved steadily to the renewable energy sector (to benefit from government subsidies) and even to the power grids that became more profitable compared to investment in production/ generation plants. As mentioned above, investment in renewable energy has begun to move towards major projects that are governed by government bidding mechanisms.

Recommendations:

1. To be mindful of energy investment indicators as they are a guide that reflects the growth potential of the global economy and the future direction of prices.
2. Optimize the role of government agencies in enhancing investors' confidence and reducing investment risks.
3. Involve the private sector in energy infrastructure projects, but taking due care to ensure that the interests of the end-consumers are not harmed.