

- If low-cost handsets were made exempt from import duties and sales taxes, up to 930 million additional low-cost handsets could be sold by 2010 in the 50 countries.

- If a government lowered taxes on mobile usage by *just one* percentage point, that could boost the number of mobile users in that country by more than 2% by 2010.

- Eliminating the special taxes could boost the numbers of mobile users in the 19 affected countries by 34 million (or 8%) by 2010.

4. Lower taxes mean greater revenue opportunities for governments in the long term

- Cutting taxes on handsets would attract new mobile users.

Mobile communications and the Internet were the two major demand drivers for telecommunication services in the last decade of the twentieth century. Combine the two -mobile Internet - and this may suggest the major demand driver of the first decades of the twenty-first century. It is easy to envision a migration of traditional PSTNs to combined mobile and IP-based networks, and the potential integration of telecommunications, broadcasting, publishing and other media functions into these networks.

## **INTERNATIONAL ENERGETIC OUTLOOK**

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Energy is very important to a modern economy. We need energy to heat and light our homes, to help us travel and to power our businesses. Our economy has also benefited hugely from our country's resources of fossil fuels - coal, oil and gas. From heating and lighting to transport, industry and communications, energy is fundamental to almost everything we do. We expect it to be available whenever we want it, to be affordable, safe and environmentally sustainable. It is only when something goes wrong - for instance, when families are left without heating and light after severe storms - that we realize how much modern industrialized countries depend upon extremely complicated energy systems.



Energy is not just “any old issue.” Most people, in fact, understand its importance very well. Why is energy always preeminent? When we look at a prioritized list of the top 10 problems, with energy at the top, we can see how energy is the key to solving all of the rest of the problems – from water to population:

**1. Energy. 2. Water. 3. Food. 4. Environment. 5. Poverty. 6. Terrorism and war. 7. Disease. 8. Education. 9. Democracy. 10. Population**

Take the second problem on the list, for example: water. Already billions of people around our planet live without reliable access to clean water for drinking and agriculture. As population continues to build and the depletion of existing aquifers worsens, we will need to find vast new sources of clean water. Luckily, our planet has huge resources of water, but most has salt in it, and it is often thousands of miles away from where we need it. We can solve this problem with energy: desalinate the water and pump it vast distances. But without cheap energy, there is no acceptable answer.

Energy likewise plays the dominant role in determining the quality of our environment, the prevention of disease, and so on, down the entire list of global concerns. In short, energy is the single most important factor that impacts the prosperity of any society.

World energy consumption is projected to increase by 57 percent from 2002 to 2025. Much of the growth in worldwide energy use is expected in the countries with emerging -economies. In contrast to the emerging economies, increases in energy consumption for the mature market economies and transitional economies are projected to be more modest. In the Eastern Europe and the former Soviet Union (EE/FSU) transitional economies, energy demand in the industrial and transportation sectors is projected to grow on average by 1.6 percent per year from 2002 to 2025.

Fossil fuels (oil, natural gas, and coal) continue to supply much of the energy used worldwide, and oil remains the dominant energy source, given its importance in the transportation and industrial end-use sectors. Non-fossil fuel use also grows, but not as rapidly as fossil fuel use. The outlook for non-fossil fuels could, however, be

altered by government policies or programs, such as environmental laws aimed at limiting or reducing pollutants from the combustion of fossil fuel consumption and encouraging the use of non-fossil fuels.

World **oil** use is expected to grow from 78 million barrels per day in 2002 to 103 million barrels per day in 2015 and 119 million barrels per day in 2025.

**Natural gas** is projected to be the fastest growing component of world primary energy consumption. Consumption of natural gas worldwide increases in the forecast by an average of 2.3 percent annually from 2002 to 2025, compared with projected annual growth rates of 1.9 percent for oil consumption and 2.0 percent for coal consumption.

World **coal** consumption is projected to increase from 5,262 million short tons in 2002 to 7,245 million short tons in 2015.

World **net electricity** consumption nearly doubles in the reference case forecast, from 14,275 billion kilowatt-hours in 2002 to 21,400 billion kilowatthours in 2015 and 26,018 billion kilowatthours in 2025. More than one-half (59 percent) of the projected growth in demand occurs in the emerging economies, where electricity use increases on average by 4.0 percent per year from 2002 to 2025, as compared with 2.6 percent per year worldwide.

Carbon dioxide is one of the most prevalent greenhouse gases in the atmosphere. Anthropogenic (human-caused) emissions of carbon dioxide result primarily from the combustion of fossil fuels for energy, and as a result world energy use has emerged at the center of the climate change debate. World carbon dioxide emissions are projected to rise from 24.4 billion metric tons in 2002 to 30.2 billion metric tons in 2010 and 38.8 billion metric tons in 2025. Much of the projected increase in carbon dioxide emissions occurs among the emerging nations, accompanying large increases in fossil fuel use. The emerging economies account for 68 percent of the projected increment in carbon dioxide emissions between 2002 and 2025.

Economic growth is among the most important factors to be considered in projecting changes in the world's future energy

consumption. Over the 2002 to 2025 period, world economic growth is projected to average 3.9 percent annually. Economic activity, as measured by gross domestic product (GDP) is expected to expand by 5.1 percent per year in the emerging economies, as compared with 2.5 percent per year in the mature market economies and 4.4 percent per year in the transitional economies of EE/FSU.

## KEY FACTORS DETERMINING INNOVATION PERFORMANCE

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Innovation systems are a set of actors (e.g. firms), institutions, markets and networks which jointly and individually contribute to the development and diffusion of new technologies. And which provide the framework within which governments form and implement policies to influence the innovation process.

The performance of an innovation system can be assessed by its capacity to generate innovation and translate that innovation into economic growth. The system includes incentives provided by the economic and regulatory environment, access to critical inputs and the internal capacity to seize market and technological opportunities. Innovation systems do not usually coincide with national boundaries. They can exist in a variety of geographical settings. But national Governments have an impact on system performance through national policies. The main role for Government is to improve the efficiency of innovation systems and facilitate their formation.

To provide a structure for policy analysis a small number of critical success factors, determining the strength of innovation systems, have been identified. All are, to varying degrees, amenable to favorable Government influence. They are:

- **The capacity to absorb and exploit knowledge** defines a firm's ability to turn knowledge into profitable goods and services.
- **The regulatory framework affects** the possibilities and incentive structures for innovation.
- **The competition regime** can remove impediments to market entry.