using a 40% combined federal and state tax rate, the difference in after-tax interest cost is $21 648, roughly the full cost of a 2.5 kW PV system.

24.8.4 Income Tax Deductions and Credits

Tax incentives are preferred by many government officials because they can get the intended economic benefits to the intended users without the need to establish an implementing bureaucracy. They are opposed by other officials who see the tax system as a method for raising funds to run the government, not as a means of implementing social policy. They can also be written with sunset provisions, ostensibly to protect the budget from runaway spending, but also to provide elected officials with an opportunity to get publicity for enacting it again and again. Tax credits and deductions therefore appear to be less stable and reliable as market incentives or subsidies. Nonetheless, there are several tax-based incentive programs in place today:

India: PV qualifies for 100% depreciation in the first year for corporate (not individual) taxes. This, in conjunction with IREDA's 2.5% loans, created a PV leasing industry in the period between the years 1997 and 2001.

United States of America: The US tax code allows a 10% tax credit against corporate taxes and five-year accelerated depreciation for photovoltaics. The combination of these incentives will drive the preferred financing of photovoltaics in the United States towards leasing. The US Congress is also considering a 15% tax credit on personal income taxes.

Government subsidies and incentives have increased in recent years with tremendous impacts on the immediate size of PV markets in Japan and Germany. The impacts in India appear to be mixed, with subsidies creating markets but also capping them at the levels of the annual budgets. Likewise, subsidies (tax credits) have had mixed results in the United States.

24.9 FUNDING GOVERNMENT RESEARCH AND DEVELOPMENT

Government funding of research and development (R&D) has traditionally been used to bridge the gap between work that is "too high risk for companies to undertake" and "commercial viability."

Photovoltaics present a case study of a successful publicly funded R&D activity. PV R&D efforts were focused on lowering manufacturing costs in volume production, improving the performance (efficiency) of the devices, and extending the operational lifetime of components and systems. Aggressive goals have been set to make photovoltaics economically competitive with traditional sources of electricity (see Reference [27]). Many countries around the world have been involved in such activities in an effort to supplement traditional energy supplies with renewable energy sources.

24.9.1 PV Programs in the United States

US-government programs in photovoltaics originated from the Conference on PV Conversion of Solar Energy for Terrestrial Applications, sponsored by the National Science