

## THE GLOBAL USE OF PEACEFUL NUCLEAR ENERGY

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***Abstract:** Since the mid-1980s, nuclear power has been a major source of electricity in the United States, second only to coal. Yet the future of nuclear power in the US and the rest of the world is uncertain. Although the US has the most nuclear capacity of any nation, the U.S. Department of Energy predicts that the use of nuclear fuel will have dropped dramatically by 2030, by which time more than 40% of capacity will have been retired. The Bush Administration has supported nuclear expansion, emphasizing its importance in maintaining a diverse energy supply, but currently the US has no plans to build additional reactors on its soil. Many fear nuclear energy, fueled by accidents such as those at Chernobyl and Three Mile Island and concern about disposal of nuclear fuel.*

***Keywords:** Energy, nuclear power, solar power, capacity. Chernobyl, fossil fuels, source of electricity.*

## ГЛОБАЛЬНОЕ ИСПОЛЬЗОВАНИЕ МИРНОЙ ЯДЕРНОЙ ЭНЕРГИИ

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***Аннотация:** С середины 1980-х годов ядерная энергетика стала основным источником электроэнергии в США, уступая только углю. Однако будущее ядерной энергетики в США и остальном мире остается неопределенным. Хотя США обладают наибольшим ядерным потенциалом среди всех стран,*

*Министерство энергетики США прогнозирует, что использование ядерного топлива резко сократится к 2030 году, и к этому времени более 40% мощностей будет выведено из эксплуатации. Администрация Буша поддержала ядерную экспансию, подчеркивая ее важность в поддержании диверсифицированного энергоснабжения, но в настоящее время у США нет планов строить дополнительные реакторы на своей территории. Многие опасаются ядерной энергетики, вызванной авариями, такими как Чернобыль и Три-Майл-Айленд, и обеспокоены утилизацией ядерного топлива.*

**Ключевые слова:** Энергетика, атомная энергетика, солнечная энергия, мощность, Чернобыль, ископаемое топливо, источник электроэнергии.

Currently, the majority of the world's electricity is generated using fossil fuels. Although estimates vary greatly about the world's supply of fossil fuels, some estimates suggest that oil could be exhausted within 50 years and coal within 25 years. Thus we must find a new source of energy. We must start to convert to nuclear energy now so there is not a major crisis when fossil fuels do run out.

Nuclear energy is clean. It does not produce gaseous emissions that harm the environment. Granted, it does produce radioactive waste, but because this is a solid it can be handled easily and stored away from population centers. Burning fossil fuels causes far more environmental damage than using nuclear reactors, even if we factor in the Chernobyl catastrophe. Consequently, nuclear energy is preferable to fossil fuels. Furthermore, as new technologies, such as fast breeder reactors, become available, they will produce less nuclear waste. With more investment, science can solve the problems associated with nuclear energy, making it even more desirable.

Unfortunately, the nuclear industry has a bad reputation for safety that is not entirely deserved. The overwhelming majority of nuclear reactors have functioned safely and effectively. The two major nuclear accidents, Three Mile Island and Chernobyl, were both in old style reactors, exacerbated in the latter case by lax Soviet safety standards. We are advocating new reactors, built to the highest safety standards. Such reactors have an impeccable safety record. Perhaps the best guarantee of safety in the nuclear industry is the increasing transparency within the industry. Many of the early problems were caused by excessive control due to the origin of nuclear energy

from military applications. As a civilian nuclear industry develops, it becomes more accountable.

We must examine the alternatives to nuclear energy. For the reasons explained above, we can rule out fossil fuels immediately. We also see enormous problems with other forms of energy. The most efficient source of renewable energy has been hydroelectric power. However, this usually creates more problems than it solves. Building a large dam necessarily floods an enormous region behind the dam, displacing tens of thousands of people. Dams also cause enormous damage to the ecology and incur enormous social and cultural costs. Solar energy has never lived up to expectations because it is hugely inefficient. Wind energy is only marginally better, with an unsightly wind farm the size of Texas needed to provide the energy for Texas alone. The great irony is that not only are most renewable sources inefficient but many are also ecologically unsound! The opposition to building wind farms in certain areas has been just as strong as the opposition to nuclear power because wind farms destroy the scenery.

The nuclear industry is a major employer. It creates numerous jobs and, with investment, will create even more.

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