The Global Nuclear Energy Partnership (GNEP) seeks to develop worldwide consensus on enabling expanded use of economical, carbon-free nuclear energy to meet growing electricity demand. This will use a nuclear fuel cycle that enhances energy security, while promoting non-proliferation.

The Global Nuclear Energy Partnership:

Greater Energy Security in a Cleaner, Safer World

The Global Nuclear Energy Partnership (GNEP) is a comprehensive strategy to increase U.S. and global energy security, encourage clean development around the world, reduce the risk of nuclear proliferation, and improve the environment.

A plentiful, reliable supply of energy is the cornerstone of sustained economic growth and prosperity. Nuclear power is the only proven technology that can provide abundant supplies of base load electricity reliably and without air pollution or emissions of greenhouse gasses. In order to help meet growing demand for energy at home and encourage the growth of prosperity around the globe, GNEP provides for the safe, extensive expansion of clean nuclear power.

GNEP is based on the principle that energy and security go hand in hand. GNEP will develop and demonstrate new proliferation resistant technologies to recycle nuclear fuel and reduce waste. The U.S. will also work with other advanced nuclear nations to develop a fuel services program that would provide nuclear fuel and

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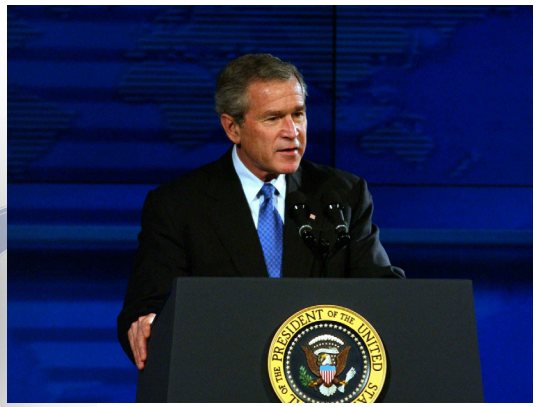

"The world must create a safe, orderly system to field civilian nuclear plants without adding to the danger of weapons proliferation."

President George W. Bush
National Defense University
February 11, 2004

"To build a secure energy future for America, we need to expand production of clean, safe nuclear power."

President George W. Bush
Ronald Reagan Building
June 15, 2005

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recycling services to nations in return for their commitment to refrain from developing enrichment and recycling technologies. GNEP is designed to allow developing nations to reliably access clean nuclear energy as an electricity source for their people in a safe and cost effective manner.

President Bush has provided $250 million in the Department of Energy's 2007 budget as an initial step of an ambitious plan to accelerate the development of technology as part of GNEP.

The Global Nuclear Energy Partnership aims to:

- **Reduce America's dependence on foreign sources of fossil fuels and encourage economic growth**.
  Nuclear power doesn't rely on imported fossil fuels, and as nuclear energy becomes increasingly used for power generation, other energy resources, like natural gas, could be directed to other essential uses such as home heating and manufacturing.
- **Improve our environment**.
  Nuclear power is capable of meeting increasing world demand for energy without emitting air pollution or greenhouse gasses. According to the IAEA, in 2004, the 443 nuclear power plants operating worldwide displaced the emissions of 2 billion metric tons of CO_2 if the same amount of electricity was generated by fossil fuels.
- **Recycle nuclear fuel using new proliferation-resistant technologies to recover more energy and reduce waste**.
  The U.S. and its international partners will work together to develop commercial recycling technologies that do not produce separated plutonium, reducing proliferation concerns. And recycling used fuel will dramatically reduce the amount of waste requiring permanent disposal.

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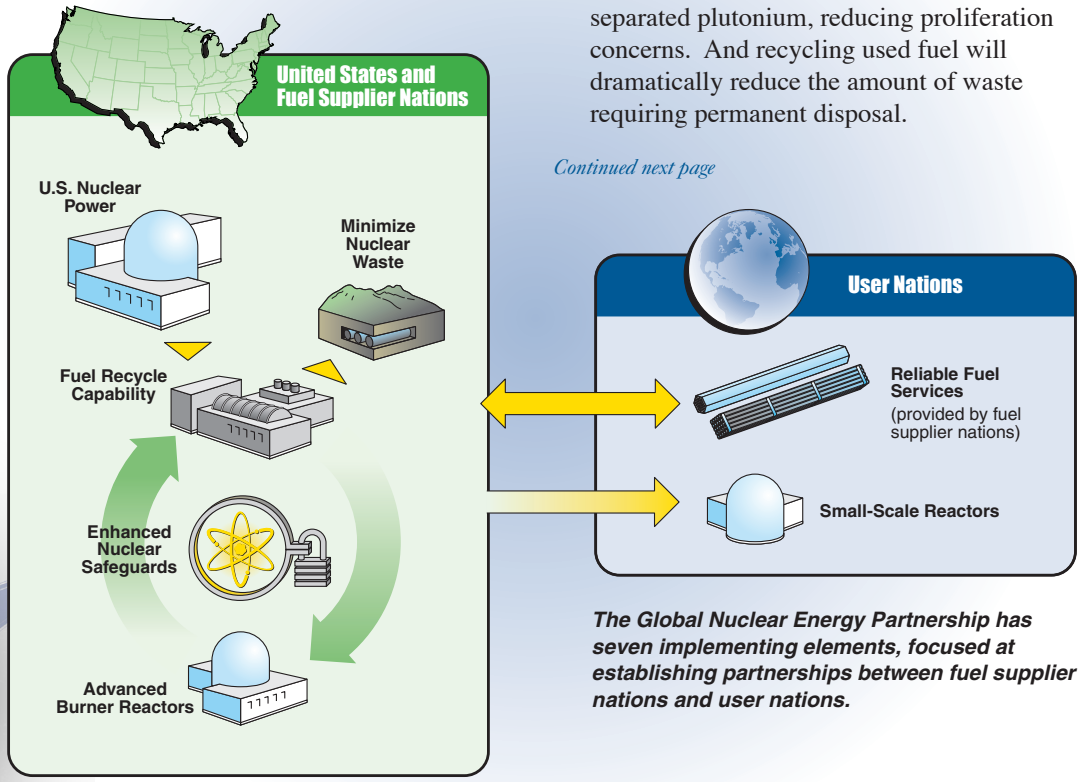

The Global Nuclear Energy Partnership has seven implementing elements, focused at establishing partnerships between fuel supplier nations and user nations.

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- **Encourage prosperity growth and clean development around the world.**
  By increasing the availability of electricity through nuclear power, millions of people will experience an improved quality of life. Additionally, these nations will utilize emissions-free nuclear energy rather than power generation technologies that pollute the air.
- **Utilize the latest technologies to reduce the risk of nuclear proliferation worldwide.**
  By developing new proliferation-resistant recycling technologies and increasing the safety and security of nuclear energy worldwide by providing fuel services to developing nations, GNEP will limit proliferation risks and keep nuclear technology and materials out of the hands of rogue states and terrorists.

The Global Nuclear Energy Partnership includes a broad implementation strategy

- **A new generation of nuclear power plants in the United States.**
  GNEP will continue building on advances made under President Bush's leadership to encourage more nuclear power in the U.S., including the NP2010 program and the recently signed Energy Policy Act of 2005 which includes federal risk insurance for the first new nuclear power plants to be built.
- **New recycling technologies that enhance proliferation resistance for more energy and less waste.**
  The U.S. and key international partners will accelerate the demonstration and deployment of new advanced recycling technologies such as UREX+ and pyroprocessing that recycle nuclear fuel in a manner that does not produce separated plutonium – a proliferation risk inherent in existing recycling technologies.

  By recycling spent fuel, more energy can be extracted from the fuel and the heat load and volume of waste requiring permanent geologic disposal is significantly reduced. The products of these new recycling technologies can be used in Advanced Burner Reactors that actually destroy plutonium. The facilities demonstrating these state of the art technologies would be designed and operated to the highest standards of worker safety and environmental protection.
- **An aggressive plan to manage spent nuclear fuel in the United States, including permanent geologic disposal at Yucca Mountain.**
  Successful demonstration of GNEP technologies will change the characteristics and significantly reduce the volume of spent fuel to be ultimately disposed of in Yucca Mountain, making disposal less complex and minimizing the need for additional geologic repositories for generations to come.

  The Administration will work with Congress to develop a legislative plan to proceed with the licensing of the Yucca Mountain repository in an effective manner.
- **Advanced Burner Reactors that recycle nuclear fuel.**
  Following initial positive results, GNEP would call for the demonstration and deployment of Advanced Burner Reactors that would use state of the art technology to produce energy from recycled nuclear fuel. Technologies like the UREX+ process remove the long lived elements in spent fuel and instead these elements are consumed to produce energy.

  The U.S. will work with international partners on this effort, and on developing the safeguard and transparency requirements important for the demonstration of these technologies for civil purposes.

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- **A Fuel Services program to enable nations to acquire nuclear energy economically while limiting proliferation risks.**
  Under GNEP, a consortium of nations with advanced nuclear technologies would ensure that countries who agree to forgo their own investments in enrichment and reprocessing technologies will have reliable access to nuclear fuel. By participating in GNEP, even developing nations can enjoy the benefits of clean, safe nuclear power while not only minimizing proliferation concerns, but also eliminating the need for expensive infrastructure investments. Moreover, once the advanced recycling technologies are demonstrated, the spent fuel would be returned to fuel supplier countries for recycling and possibly ultimate disposition.

  This builds on the moratorium on the sale of enrichment and reprocessing technologies that has been in place over the past two years among G-8 nations.
- **Small scale reactors designed for the needs of developing countries.**
  GNEP would call for an expanded program to design and deploy small scale nuclear reactors that are cost effective and well-suited to conditions in developing nations. The U.S. will seek agreement on key safety, proliferation and safeguards standards. The U.S. will also encourage the GNEP consortium to pursue the ultimate goal of developing and deploying a small scale reactor that utilizes the same nuclear fuel for the lifetime of the reactor, eliminating the need for replacement.
- **Improved nuclear safeguards to enhance the proliferation-resistance and safety of expanded nuclear power.**
  Under GNEP, an international safeguards program is an integral part of the global expansion of nuclear energy and the development of future proliferation-resistant fuel cycle technologies. A basic goal of GNEP is to make it nearly impossible to divert nuclear materials or modify systems without immediate detection. In order for the IAEA to effectively and efficiently monitor and verify nuclear materials, GNEP will design advanced safeguards approaches directly into the planning and building of the expanding base of nuclear energy systems and fuel cycle facilities. The U.S. will continue to work closely with the IAEA and our international partners to ensure that civilian nuclear facilities are used only for peaceful purposes.

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