



## Energy Focus Area

### Summary of the current Energy Situation

USFED highlights the growing global challenge of climate change caused primarily by industrialization, fossil fuel consumption, and rising greenhouse gas emissions. According to NASA, the Earth's average temperature has increased by approximately 1°C since the early 1900s, leading to more extreme weather events worldwide. A major contributor to climate change is the energy sector, which accounts for more than 85% of carbon dioxide emissions. Fossil fuels still supply over 80% of global primary energy consumption. In response, world leaders adopted the Paris Agreement in 2015, aiming to limit global warming to well below 2°C and ideally 1.5°C above preindustrial levels. However, the Earth's temperature in 2026 is currently estimated to be about **1.4°C to 1.5°C warmer than pre-industrial times**.

USFED emphasizes the urgent need to accelerate the transition to renewable and low-emission energy sources such as:

- Solar energy, Wind energy, and Battery storage systems – these are used widely used
- Geothermal energy
- Nuclear, particularly small modular reactors for applications such as new Data Centers
- Biogas for both cooking and input to produce hydrogen or electricity
- Green Hydrogen energy for generating electricity as well as using for multiple applications including mobility (buses, cars, trains, etc.). Advances in utilizing ocean water for the production of hydrogen are making steady progress.

The future of global energy is shifting rapidly away from fossil fuel dominance toward a diversified, low-carbon mix. Driven by the urgent need to combat climate change, establish energy independence, and power energy-intensive technologies like Artificial Intelligence (AI) data centers, several core resources are shaping the future landscape.

Renewables are no longer a "future" concept—they are the primary engine of new power capacity globally. Although renewable energy deployment is growing, it remains far below the levels required to meet 2050 climate goals. One challenge is the intermittent nature of solar and wind energy, creating demand for advanced energy storage technologies such as batteries, pumped hydro, and compressed air storage, and high cost for instance for hydrogen generation.

USFED also discusses the strategic role of the United States and India in advancing clean energy collaboration, particularly in hydrogen energy, biofuels, renewable energy research & development, and microgrid technologies. Hydrogen is presented as a promising zero-emission energy carrier capable of helping decarbonize transportation, manufacturing, and power generation.

**The role envisioned for USFED includes:**

- Creating climate and energy awareness
- Supporting students and workforce development
- Connecting global industry leaders
- Building strategic partnerships
- Promoting sustainable energy innovation
- Supporting microgrid and hydrogen initiatives

-----**OPTIONAL Additional Details can be included**-----

**What USFED Can Do in This Area**

USFED, as a tax-exempt public charity (such as a 501(c)(3) organization in the U.S.) can play a major role in climate change mitigation, environmental education, clean energy awareness, and community resilience. The charity must focus on educational, scientific, charitable, and public-benefit activities rather than private commercial gain.

**1. Climate Education and Public Awareness**

The charity can:

- Conduct seminars, webinars, and public conferences on climate change
- Publish educational reports and research
- Develop curriculum for schools and colleges
- Run public campaigns on sustainability and energy conservation
- Create awareness about renewable energy adoption

Possible programs:

- “Climate Literacy for Students”
- “Renewable Energy Awareness Workshops”
- “Community Sustainability Forums”

**2. Workforce Development and Training**

The organization can train students and professionals in:

- Solar installation and maintenance
- Wind energy systems
- Battery storage technologies
- Hydrogen technologies
- Energy efficiency and sustainability

Potential activities:

- Certification programs
- Internship partnerships
- Technical boot camps
- University collaboration programs

This aligns well with charitable educational purposes.

### **3. Research and Demonstration Projects**

A public charity can support:

- Non-commercial pilot projects
- Demonstration microgrids
- Community solar initiatives
- Hydrogen energy feasibility studies
- Sustainable building demonstrations

Examples:

- Solar-powered community centers
- Educational microgrid labs
- Renewable energy innovation hubs

Research activities may qualify as scientific and educational charitable work.

### **4. Community Resilience and Environmental Justice**

The charity can help vulnerable communities by:

- Supporting energy access in underserved regions
- Promoting affordable clean energy solutions
- Assisting communities impacted by extreme weather
- Educating low-income households on energy savings

Programs could include:

- Community cooling centers
- Emergency solar backup systems
- Climate resilience planning workshops

### **5. Partnerships and Global Collaboration**

The organization can act as a convening platform connecting:

- Universities
- Government agencies
- Industry experts
- International partners
- Nonprofits and NGOs

Possible activities:

- U.S.–India clean energy forums
- Joint research partnerships
- International sustainability conferences
- Knowledge exchange programs

### **6. Youth Engagement and STEM Programs**

The charity can inspire future leaders through:

- Climate innovation competitions
- STEM education programs
- Clean energy hackathons
- Student research fellowships

Focus areas:

- Hydrogen economy
- Battery technologies
- Smart grids
- Carbon reduction technologies

## **7. Policy Education and Nonpartisan Advocacy**

A public charity may:

- Educate policymakers and the public on climate science
- Publish nonpartisan policy recommendations
- Conduct public-interest research

However, it must avoid:

- Supporting political candidates
- Excessive lobbying activities

## **8. Fundraising and Grant Opportunities**

Climate and clean energy initiatives are attractive to:

- Government grants
- Philanthropic foundations
- Corporate ESG programs
- International development agencies

Potential funding areas:

- Renewable energy education
- Climate resilience
- Workforce development
- Green technology innovation
- Environmental justice

## **Suggested Strategic Focus Areas for the Charity**

A strong mission statement could focus on:

“Advancing climate resilience, renewable energy education, sustainable technology innovation, and global collaboration for a cleaner and more equitable future.”

Recommended strategic pillars:

1. Climate Education
2. Renewable Energy Workforce Development
3. Hydrogen and Microgrid Innovation
4. Community Sustainability
5. U.S.–India Energy Collaboration
6. Youth and STEM Engagement

## 7. Environmental Research and Partnerships

### **Potential Signature Programs**

- Clean Energy Leadership Summit
- Hydrogen Innovation Initiative
- Solar for Communities Program
- Climate Education Fellowship
- Sustainable Cities Partnership
- Green Workforce Academy
- Microgrid Demonstration Project
- Youth Climate Innovation Challenge

These activities are generally compatible with the mission of a tax-exempt public charity when structured for public benefit, education, and research rather than private commercial profit.