

JPS | Foundation

PowerUp

ENERGY CLUB



CLUB GUIDE

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WELCOME TO A NEW WORLD OF ENERGY!

We are committed to advancing innovation, sustainability and environmental stewardship, and are pleased to welcome you to the JPS Foundation Power Up Energy Club. This club, dedicated to empowering students with the knowledge and tools to effect positive change in their schools and communities, represent a dynamic force in the pursuit of a more sustainable future.

WHAT IS THE POWER UP ENERGY CLUB?

This after-school club is a fun and exciting journey through the world of energy and renewables. In this engaging and enlightening club, students will delve deep into the intricacies of energy fundamentals, demystify the generation of electricity, unravel the complexities of the electric bill, delve into safety and explore the vital role of renewables. The Power Up Energy Club will also take students behind the scenes of energy generation, equip them with the knowledge to master energy conservation, and empower them to become guardians of the Earth in a warming world.

And the excitement does not stop there! Each year, clubs will have the opportunity to compete for attractive prizes using knowledge gained in the club combined with their own innovative genius, to create and implement a project addressing climate change.

WHY A POWER UP ENERGY CLUB?

The establishment of the Power Up Energy Club is driven by the need to equip students with a comprehensive understanding of electricity, energy production, and the consequences of excessive energy consumption in our daily lives. The primary objective is to empower students with critical thinking skills and build their innovative capacity, enabling them to effectively address and seek solutions for the inescapable challenges posed by climate change.

The JPS Foundation Power Up Energy Club seeks to:

- **EDUCATE** - students on energy-related matters as well as environmental stewardship
 - **CONNECT** - club members and their peers, JPS, communities, energy experts and the national energy network
 - **INNOVATE** - fuel innovation by inspiring creative and forward-thinking solutions to energy challenges.
 - **INSPIRE** - behavioural change in energy consumption, reshape perspectives towards JPS and the energy sector, all while nurturing a culture of creativity and INNOVATION in energy solutions.
 - **GROW** - a generation of students who are developing their leadership capacity
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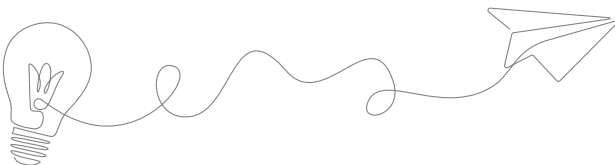
BENEFITS:

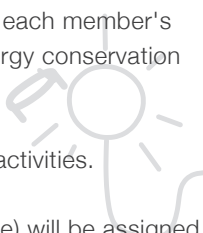
- Empower students with knowledge about sustainable energy practices.
- Enhance critical thinking skills through engaging activities and discussions.
- Foster a sense of environmental responsibility and climate awareness.
- Establish a foundation for future careers in energy, engineering, and environmental sciences.
- Build the innovative capacity of our students

Club Resources

In our unwavering dedication to the Power Up Energy Club's success, the JPS Foundation is pleased to offer the following resources to participating schools:

- 1) **Power Up Energy Banner:** A visually striking banner to showcase the club's presence and commitment to sustainable energy practices.
- 2) **Branded Shirts:** Members will receive distinctive shirts bearing the Power Up Energy Club logo, fostering a sense of unity and pride.



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- 3) **Club Pins:** Exclusive club pins designed to symbolize each member's contribution to the collective mission of promoting energy conservation and sustainability.
 - 4) **Workbook:** Information rich workbooks with exciting activities.
 - 5) **Mentors:** JPS VOLTS (Volunteers on Location to Serve) will be assigned to your school to provide you with support and direct access to JPS.
 - 6) **Report Templates:** Weekly, monthly and annual reports will help you to ensure you are keeping on track for your targets.

We encourage schools to utilize these resources creatively to enhance the visibility and impact of their Power Up Energy Clubs. Additionally, consider exploring further educational materials, guest speakers, and collaborative projects to enrich the club experience.

Additionally, JPSF will provide assistance for the following:



1. Guest Speaker Opportunities:

- Arrangement for professionals in the field to speak to the students.

2. Seed Funding:

- Small grants to fund energy-saving projects initiated by the club.
- Financial support for organizing awareness events or campaigns.

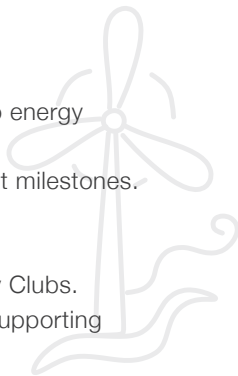
3. Community Outreach Materials:

- Banners or signage to promote energy awareness in the school community.

4. Recognition Awards:

- Certificates or awards for outstanding contributions to energy conservation.
- Recognition programs for schools achieving significant milestones.

5. Collaboration Opportunities:

- Networking opportunities with other Power Up Energy Clubs.
 - Collaboration with local businesses or organizations supporting sustainability.
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6. **Virtual Tours:**

- Virtual tours of eco-friendly facilities or renewable energy installations.
- Access to virtual learning experiences related to sustainability.

7. **Field Trip Support:**

- Assistance in organizing field trips to renewable energy facilities.
 - Funding or logistical support for educational excursions.
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WHAT DO WE WANT YOU TO ACHIEVE?

1. **Energy Fundamentals, Exploring the Power Within:**

- Gain a deep understanding of energy fundamentals, including its various forms, sources, and production methods
- Understand energy conversion

2. **Unleashing the Power, How Electricity is Made:**

- Explore the process of electricity generation, from its birth to its economic implications.
- Decode electric billing statements and learn about energy economics.

3. **Staying Safe with Electricity, Shocking Truths:**

- Prioritize safety by recognizing electrical hazards and applying safety protocols.
- Master energy conservation strategies for personal and environmental benefits.

4. **Energizing Our Future: The World of Renewables and More**

- Investigate the world of renewable energy sources and their environmental impact.
- Embrace innovation and technology in the context of energy production and the future of energy.

5. **Guardians of the Earth: Climate Resilience and a Warming Planet**

- Understand the interconnectedness between energy dynamics and climate change.
- Develop strategies for climate resilience, adaptation, and sustainable practices.

6. Community Engagement and Green Living:

- Engage with the community by sharing knowledge and promoting sustainable practices.
- Embrace green living principles and encourage sustainable decision-making for a healthier planet.

CLUB CONTENT

SPECIFIC OBJECTIVES, CONTENT AND SUGGESTED ACTIVITIES

SPECIFIC COURSE OBJECTIVES	CONTENT	SUGGESTED ACTIVITIES
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Energy Fundamentals, Exploring the Power Within

1.1 Define and describe the fundamental principles and nature of energy.	<ul style="list-style-type: none">• Define energy• Units of energy	<ul style="list-style-type: none">• Jingle composition competition• Activities
1.2 Identify various forms and sources of energy.	<ul style="list-style-type: none">• Differentiate between kinetic and potential energy• Introduce forms and sources of energy such as thermal, wind, mechanical, light and sound energy	<ul style="list-style-type: none">• Class discussion• Quiz
1.3 Define and comprehend energy consumption	<ul style="list-style-type: none">• Define energy consumption	<ul style="list-style-type: none">• Activity- energy consumption audit
1.4 Explain the principle of energy conversions and efficiency	<ul style="list-style-type: none">• Energy transfer and conversion, for example, from sound to heat energy• Define efficiency as the effectiveness of energy conversion from one form to another	<ul style="list-style-type: none">• Class participation in giving examples of energy conversion• Demonstration, for example, a blender converting electrical energy to mechanical, heat and sound energy.

1.5 Discuss Energy sources	<ul style="list-style-type: none"> Describe the formation of Fossil Fuels 	<ul style="list-style-type: none"> Fossil fuel timeline poster
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Unleashing the Power, How Electricity is Made

2.1 Discuss the processes of energy production and distribution.	<ul style="list-style-type: none"> Describe the energy generation process at JPS Explain Energy distribution in Jamaica 	<ul style="list-style-type: none"> Class participation and quizzes. Activities
2.2. Understand the technology and engineering involved in power generation.	<ul style="list-style-type: none"> Combustion, boiler and operations of the steam turbine 	<ul style="list-style-type: none"> Video presentation of operations at JPS
2.3. Gain insights into the operational dynamics of energy generation facilities.	<ul style="list-style-type: none"> Share slides showing the current process at the JPS 	<ul style="list-style-type: none"> Guest speaker
2.4 . Discuss the importance of energy generation for societal progress.	<ul style="list-style-type: none"> Quality of life, health care, economic growth, transportation etc. 	<ul style="list-style-type: none"> Class presentations Activities
2.5 Interpret electric billing statements and cost breakdowns.	<ul style="list-style-type: none"> Breakdown a JPS bill to understand consumption, Fx adjustment etc. 	<ul style="list-style-type: none"> Interpret a JPS bill

Staying Safe with Electricity, Shocking Truths

3.1 Recognize electrical hazards and potential risks.	<ul style="list-style-type: none"> Define electrical hazards Potential risks such as electrocution, fires etc. 	<ul style="list-style-type: none"> Class discussion Prepare a safety brochure
3.2 Promote safety awareness in various settings.	<ul style="list-style-type: none"> Electrical shocks, wet environments, overloaded circuits, plug safety 	<ul style="list-style-type: none"> Poster presentation Activities
3.3 Discuss Lightning as a danger	<ul style="list-style-type: none"> Describe how lightning is formed Discuss the dangers of lightning 	<ul style="list-style-type: none"> Activities Video presentation

Energizing Our Future: The World of Renewables and More

4.1 Explore renewable energy sources such as solar and wind.	<ul style="list-style-type: none"> • Define renewable resources • Different sources of energy: geothermal, tidal, wind, water • Describe biofuels 	<ul style="list-style-type: none"> • Project-based Competition
4.2 Evaluate the environmental and economic implications of renewable energy.	<ul style="list-style-type: none"> • Environmental and economic implications 	<ul style="list-style-type: none"> • Quiz
4.3 Discuss the role of innovation in shaping the future of energy.	<ul style="list-style-type: none"> • Renewable technology, energy storage solutions, energy efficiency and conservation 	<ul style="list-style-type: none"> • Class discussion • Activities
4.4. Identify energy conservation strategies for households	<ul style="list-style-type: none"> • Conservation strategies 	<ul style="list-style-type: none"> • Quiz • Activities
4.5. Implement effective energy-saving practices in daily life.	<ul style="list-style-type: none"> • Ask students to account for energy saving practices over 2 weeks 	<ul style="list-style-type: none"> • Poster presentation

Guardians of the Earth: Climate Resilience and a Warming Planet

5.1 Explain global warming and climate change	<ul style="list-style-type: none"> • Describe the greenhouse effect as useful • Explain enhanced greenhouse effect and its relationship to global warming 	<ul style="list-style-type: none"> • Video presentation • Reflection papers
5.2 Describe climate resilience	<ul style="list-style-type: none"> • Adaptation and preparedness, risk reduction, capacity building 	<ul style="list-style-type: none"> • Debate
5.3. Develop strategies for climate resilience and adaptation.	<ul style="list-style-type: none"> • Risk assessment, infrastructure, water management, agriculture 	<ul style="list-style-type: none"> • Action plan • Class discussion

Community Engagement and Green Living

6.1. Advocate for sustainable practices and policies to combat global warming.	<ul style="list-style-type: none"> • Define community engagement • Explain sustainable practices • Define advocacy 	<ul style="list-style-type: none"> • Quiz • Debate
6.2. Embrace green living principles and sustainable lifestyle practices.	<ul style="list-style-type: none"> • Define green living • Discuss green living principles • Explore sustainable lifestyle principles 	<ul style="list-style-type: none"> • Activities • Skit
6.3. Reduce personal and collective carbon footprints.	<ul style="list-style-type: none"> • Define carbon foot print • Brainstorm ideas to reduce Carbon foot print 	<ul style="list-style-type: none"> • Class discussion • Activities

This curriculum is designed to provide club members with a comprehensive understanding of energy management, environmental responsibility, and the role of innovation and technology in shaping the future of energy. It also encourages active participation and hands-on learning, empowering students to become advocates for sustainable energy practices in their communities.

Power Up Energy Club Sustainability

In our ongoing efforts to ensure the longevity and impact of the Power Up Energy Clubs, we are excited to introduce a comprehensive sustainability plan. This plan not only paves the way for the continual growth of the clubs but also sets a strong foundation for their annual operation as we welcome new schools into our vibrant community of change-makers.

KEY ELEMENTS OF THE SUSTAINABILITY PLAN:

1. Governance Structure and Leadership Roles:

One of the cornerstones of our sustainability plan is the establishment of a clear and robust governance structure. This structure will delineate the roles and responsibilities of club leaders, advisors, and members, ensuring effective coordination and leadership.

2. Meeting Framework:

To maintain consistency and productivity, we have outlined what a typical

Power Up Energy Club meeting could look like. This framework aims to optimize club meetings, providing a structured agenda that covers essential topics, discussions, and activities related to energy conservation, sustainability, and environmental education.

3. Guest Presenters and Field Trips:

We understand the value of exposure to subject matter experts and hands-on experiences. The sustainability plan incorporates suggestions for inviting guest presenters and arranging field trips, enhancing the club's engagement and understanding of various aspects of sustainability.

4. Annual Competition Opportunities:

A hallmark of the Power Up Energy Clubs is the opportunity for students to participate in two annual competitions. These competitions encourage students to apply their knowledge and creativity in making a difference. Competition 1: Clubs can choose to undertake public education campaigns, conceptualize and mock up social enterprise projects, develop technological innovations, or initiate climate action projects within their schools.

Competition 2: Clubs will participate in an inter-club debating competition. Numerous possible debate topics are provided in the accompanying student workbook.

By integrating these essential components into our sustainability plan, we aim to ensure that the Power Up Energy Clubs not only endure but also thrive. Through the combined efforts of students, educators, and our partners, we will continue to foster a culture of sustainability, innovation, and positive change. Together, we can illuminate the path toward a greener and more sustainable future for all.

Governance Structure and Leadership Roles for Each Club:

1. Faculty Advisor:

- **The Faculty Advisor plays a pivotal role in the effective governance of the club. They are a vital link between the club and the school's administration, offering valuable support and guidance to students.**
- **Responsibilities to the School and Principal:**
 - Ensure that all Energy Club projects and fundraising activities adhere to the school's policies and regulations.
 - Ensure that the Energy Club's bylaws are always in compliance with school regulations governing students.
 - Maintain accurate financial records for the Energy Club, following standard procedures for student groups.
 - Advocate for the Energy Club, ensuring that the school administration and faculty understand the club's mission and activities.

- **Responsibilities to Energy Club Membership:**

- Attend all regular and board meetings.
- Ensure the Energy Club meets regularly, preferably on a weekly basis.
- Collaborate with club members to define shared responsibilities for guiding and supervising the club.
- Assist in securing meeting room space for club and board meetings.
- Aid in recruiting new members for the club by leveraging connections with other faculty members and students.
- Promote proper publicity for Energy Club events within the school.
- Seek input and ideas for service projects from faculty, administration, and other groups.
- Maintain order during club activities.
- Collaborate with the Mentor to invite other schools to participate in Energy Club meetings and events.
- Hold regular discussions with the Mentor about Energy Club plans and challenges, possibly outside of club meetings.

2. President:

- **The President takes charge of the club's day-to-day operations and fosters a positive and open environment within the club.**

- **Responsibilities:**

- Ensure well-planned and organized club and board meetings.
- Develop relationships with school administrators, faculty advisors, and the Mentor.
- Coordinate special guests and speakers for club meetings and events in collaboration with the Faculty Advisor and Mentor.
- Oversee the club's election process.
- Define roles, expectations, and project specifics for club committees.
- Set goals, develop strategies, and conduct evaluations for continuous club improvement.
- Engage all club members, keeping them informed and enthusiastic about their involvement.
- Ensure that all officers, board members, and committees understand their roles and responsibilities.
- Establish membership recruitment goals and actively involve new members throughout the year.

3. Vice-President:

- **The Vice-President assists in club activities and provides general oversight of operations.**

- **Responsibilities:**

- Learn and assist with the President's duties to provide backup as needed.

- Supervise the committee system, ensuring monthly meetings and goal-oriented work.
- Implement a new-member education program for all newcomers.
- Support other officers in their responsibilities.
- Collaborate with the President to invite and coordinate special guests and speakers for club activities.

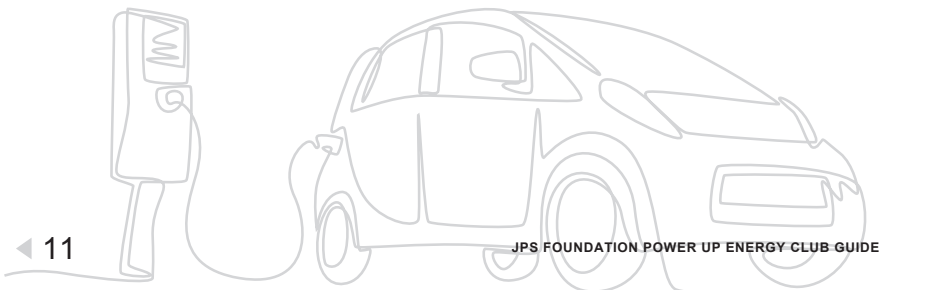
4. Secretary:

- **The Secretary is responsible for administrative tasks and record-keeping within the club.**
- **Responsibilities:**
 - Take minutes during club and board meetings.
 - Maintain records, files, and essential details for club operations.
 - Review and update the club's roster, ensuring active members are listed.
 - Prepare meeting agendas in consultation with the President.
 - Collect and submit monthly reports.
 - Keep attendance records for all meetings.
 - Manage club correspondence and maintain member contact information.

5. Treasurer:

- **The Treasurer is in charge of the club's finances, overseeing collections and disbursements.**
- **Responsibilities:**
 - Adhere to school policies regarding financial accounting for student organizations.
 - Ensure proper procedures for collecting dues, updating membership rosters, and meeting deadlines.
 - Prepare the budget and financial reports for presentation to the executive board.
 - Collaborate with fundraising efforts and maintain meticulous records of club accounts, including contributions from JPS and external donors.

These defined roles and responsibilities aim to streamline the governance of the Energy Club, fostering a structured and effective leadership framework for its successful operation.



FRAMEWORK FOR CLUB CONTINUITY

Perpetuating the "Power Up Energy Club" from year to year requires careful planning and a strategic approach. Here are some steps to ensure the sustainability of the club:

1. Establish Clear Leadership Succession:

- Develop a clear leadership structure within the club, including roles like president, vice-president, secretary, and treasurer. Ensure that there is a well-defined process for electing new leaders each year.

2. Mentorship Program:

- Create a mentorship program where experienced club members pass down their knowledge and experience to newer members. This ensures a smooth transition and the transfer of institutional knowledge.

3. Faculty Advisor Continuity:

- Encourage faculty advisors to commit to the club for multiple years. This provides stability and continuity in club management. If an advisor must change, ensure a smooth handover to the new advisor.

4. Yearly Club Goals and Plans:

- At the beginning of each school year, set specific goals and plans for the club. This helps maintain a sense of purpose and direction.
- Vary projects and activities from year to year.

5. Regular Meetings and Activities:

- Hold regular club meetings and engage in ongoing activities to keep members interested and involved. Consistency is key to maintaining enthusiasm.

6. Document Club Activities:

- Keep thorough records of the club's activities, projects, and achievements. Create a club handbook or archive that new members can reference.

7. Recruitment and Promotion:

- Actively recruit new members each year by promoting the club through school announcements, social media, and school events. Encourage existing members to invite their peers.

8. Guest speakers

- Invite different speakers from year to year. Speakers can be invited from organizations such as JPS, NEPA, PETROJAM, UWI, UTECH.

9. Field trips

- Plan field trips to the JPS to observe electricity generation
- Plan field trips to wind farms to observe renewable energy sources in action

- Plan field trips to ICENS| International Centre for Environmental and Nuclear Sciences, UWI

10. Fundraising and Budget Management:

- Develop a sustainable fundraising strategy to ensure the club has the necessary resources for its activities. Manage the budget responsibly.

11. Collaboration with School Administration:

- Maintain a good relationship with school administrators to secure support and resources for the club. This includes meeting space, funding, and any necessary approvals.

12. Public Engagement and Awareness:

- Organize events and activities that involve the broader school community and raise awareness about the importance of sustainable energy practices. This can help garner support and interest in the club.

13. External Partnerships:

- Collaborate with local businesses, energy companies, or environmental organizations to access resources and expertise. Partnerships can provide opportunities for club growth and sustainability.

14. Annual Review and Evaluation:

- Conduct an annual review to assess the club's achievements, challenges, and areas for improvement. Use this feedback to make necessary adjustments

15. Celebrate Achievements:

- Recognize and celebrate the club's achievements and milestones, such as successful projects or outreach efforts. This fosters a sense of pride and belonging among members.

16. Alumni Involvement:

- Keep in touch with club alumni and encourage them to stay engaged. They can serve as mentors, guest speakers, or sponsors for the club.

By implementing these strategies, the "Power Up Energy Club" can continue to thrive and inspire new generations of students to pursue sustainable energy practices and make a positive impact on their school and community year after year.

Power Up Energy Club Meeting Format:

I. Opening (5 minutes)

- Welcome and Introduction:
 - Greet members and acknowledge any new attendees.
- Record attendance.

II. Review of Previous Meeting (5 minutes)

- Recap of Action Items:
 - Discuss any tasks or action items assigned during the last meeting.
 - Celebrate achievements and progress made since the last gathering.

III. Ice Breaker / Fun Activity (10 minutes)

- Get participants energized and relaxed by engaging in a fun group game

IV. Educational Segment (25 minutes)

- Guest Speaker or Discussion:
 - Invite a guest speaker to present a topic related to energy or discuss content and assign activities from workbook.
 - Allow time for questions and discussion.

IV. Club Activities and Initiatives (10 minutes)

- Project Updates:
 - Members share progress on individual or group projects related to sustainability and energy conservation.
 - Discuss challenges and brainstorm solutions.
- New Ideas and Proposals:
 - Encourage members to propose new ideas or initiatives for the club.

V. Closing (5 minutes)

- Recap and Action Items:
 - Summarize key points discussed during the meeting.
 - Outline action items for members before the next gathering.
- Appreciation and Acknowledgment:
 - Express gratitude to members for their contributions and commitment.
 - Remind everyone of the positive impact the club is making.

Note: This meeting format is designed to provide a structured yet flexible framework for Power Up Energy Club meetings. Adapt the agenda as needed to accommodate specific events, guest speakers, or emerging priorities within the club's sustainability plan. Regularly assess and refine the meeting format based on feedback from members to ensure continuous improvement and engagement.

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