King AbdAllah II Initiative for public school heating
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Presented by

For

EVERLASTING FIRST GRADE FESTIVAL
Science and Technology
For
ENEPLAN Final Conference
Beirut 13–14 September 2018
Why we need to heat public schools in Jordan
Because it is cold
1.3 Million Student
attending
Public schools
Employ
80,000 Teacher
10,000 Administrative staff
Used
Traditional Heaters
Feasibility
Effectiveness
that effect
Wellbeing and health
1.3 Million
Student

80,000
Teacher

10,000
Administrative staff

attending

Employ

arranging
Leading to
Educational Drawbacks

Higher absence rate due to illness
Lower comfort
Lower Scientific achievement
The Initiative

His Majesty King Abdullah II, ordered that all public schools across the Kingdom are provided with sufficient heating in a multi-phased project.
Heating system
Renewable Energy Technologies

- Roof Top PV
- Wheeling PV
- Solar Water Heater
- Energy Efficiency
- LED Lighting
- Heat pumps
Using renewable energy technologies, which incorporate:
- Roof Top PV
- Wheeling PV
- Solar Water Heater
- Energy Efficiency
- LED Lighting
- Heat pumps

Which lack in efficiency and feasibility.

Which incorporate...
has a definitive
Goals
The Initiative
His Majesty King Abdullah II, ordered that all public schools across the Kingdom are provided with sufficient heating in a multi-phased project.
Education

Creating better learning environments
By enhancing the thermal comfort and the indoor Air quality
Economy

- Develop a sustainable green economy model
- Promote Jordanian Energy Service Providers (ESPs)
- Attract investors towards EE and RE investments
- Building professional expertise
Social impact

- Awareness for students and teachers and local community
- Develop sense of ownership
Activities

70 schools self-funded by JREEEF and 57 schools co-funded for 2017.
- Measures: EE (insulation, HVAC, lighting, SWHs, etc.), and PV rooftop systems
- JREEEF budget is 8M JOD ($11.3M).
- Target 100 schools/year fully or Co-funded by JREEEF till 2020.
- Remaining schools will be covered by a program being developed with EBRD Under PPP scheme (2,600 out of 3760 schools)
Deliverables

- Schools Heating
- Installation of Energy-Saving Lighting
- Appropriate Ventilation inside the schools facilities
- Water Heated By Solar Energy
- Generate Electricity Through Renewable Energy
- General Maintenance & Insulation that Will Save Energy Consumption.
- Any Technical Action Would Achieve set objective
Leading to
Achievements

- 1.5 MW (DC) Decentralized Systems
  - Capacity will offset 100% of electricity bill

- CO2 Reduction 1,310 Ton/Year
  - Energy Yield 2,340,000 kwh

- Serving more than 30000 students with clean energy
  - Financial savings 397,800 JoD/Year
Funded by
Funding tools

- Revolving Credit
- Grants
- Equity Financing
- Guarantees
- Technical Assistance
Incorporating with
Thank you

Acknowledgment:
Special thanks to
Eng. Diana Athamneh, Project Manager
and Dr. Rasmi Hamza, JREEEF General Manager
Conclusion

students and will phase out the traditional heating systems used in schools which are deemed inefficient and put students' safety at risk. In conclusion, energy needs were addressed through the use of renewable energy and energy efficiency concepts and good collaboration between all major stakeholders putting forward a successful project with positive sustainable social impact extending to most school pupils in Jordan.
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The Initiative

JREEEF

Funding tools

Goals

Deliverables

Achievements

Activities

Funded by

Has a definitive

In

Leading to

Partners

The Funding started in 2018, but the initiative has not yet been implemented due to funding issues.

Achievements include:

- Educational improvements in schools
- Increased learning outcomes
- Improved student attendance

Activities include:

- Training workshops for teachers
- Installation of heating systems in public schools
- Collaboration with local businesses

Deliverables:

- Detailed reports on project progress
- Recommendations for future initiatives

Acknowledgments:

- Eng. Qatada Damra, Project Manager
- Mr. Ammar Al-Asaadi, General Manager

Acknowledgments of funding partners:

- JREEEF
- Local businesses