



**PaCT**
Partnership for
Cleaner Textile

RESOURCE EFFICIENCY FINANCING OPPORTUNITIES IN THE TEXTILE SECTOR

Workshop on Reducing Water and Recovering Heat
Dhaka, 16th November 2016



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Implemented by:



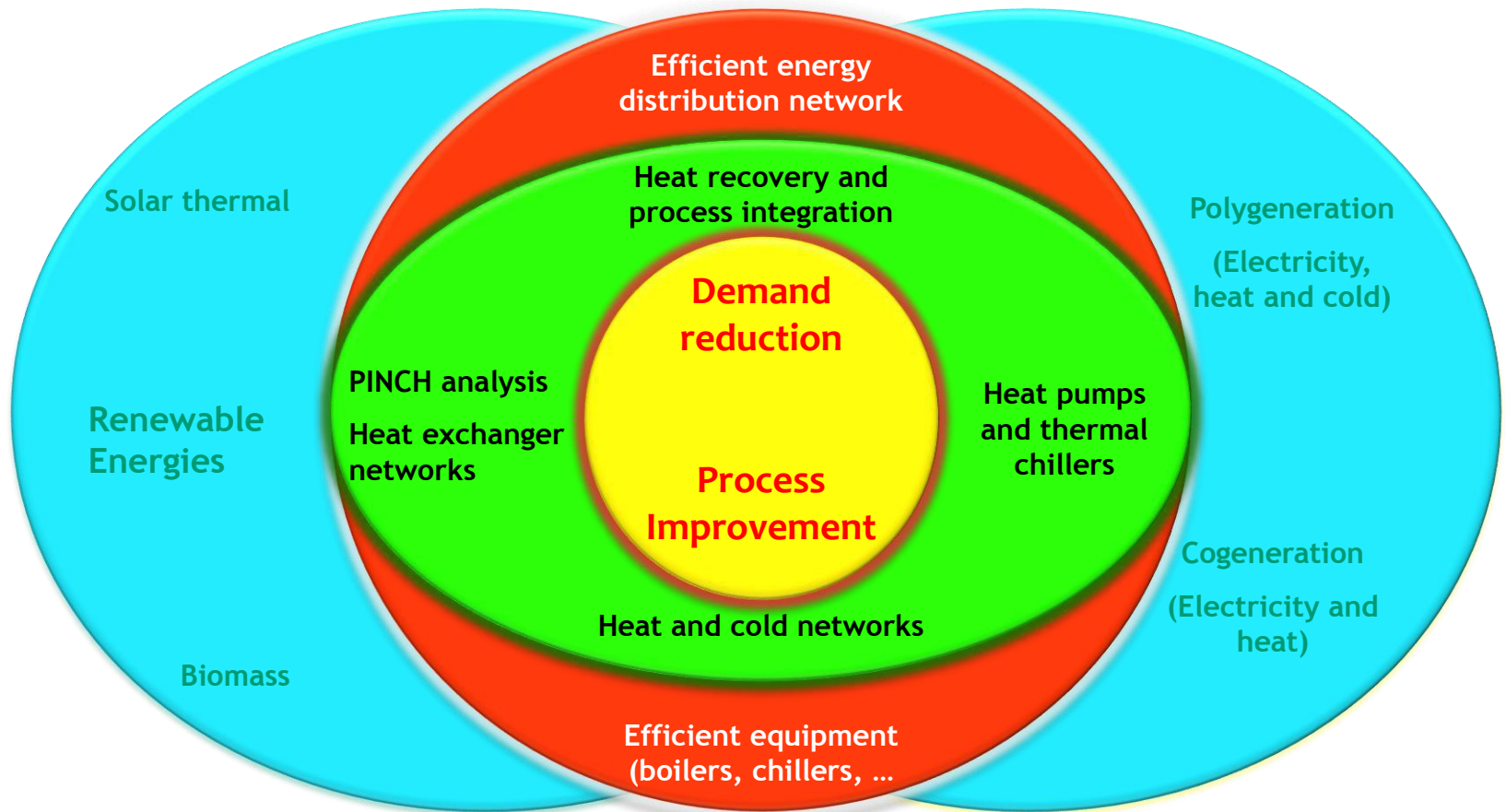
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PRESENTATION OUTLINE

- **Scope for Energy Recovery in Industry**
- **Resource Efficiency Financing Approach**
- **Case Study of Resource Efficiency Financing**
- **Conclusions**

Scope for Energy Recovery in Industry

PATH TO SUSTAINABLE ENERGY USE



WHERE IS HEAT WASTED IN AN INDUSTRY?

- Heat wasted in industry in processes and in utilities



Cloth dyeing

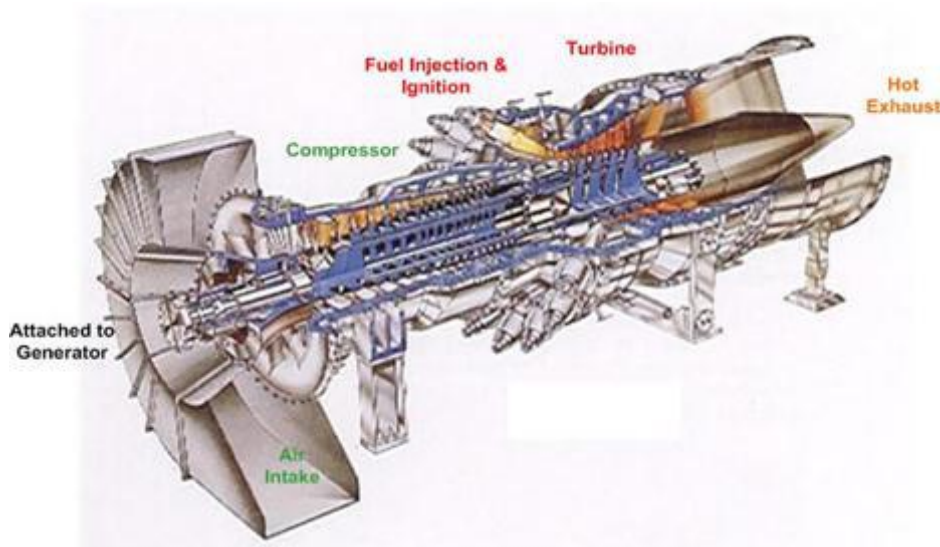


Cloth stentering

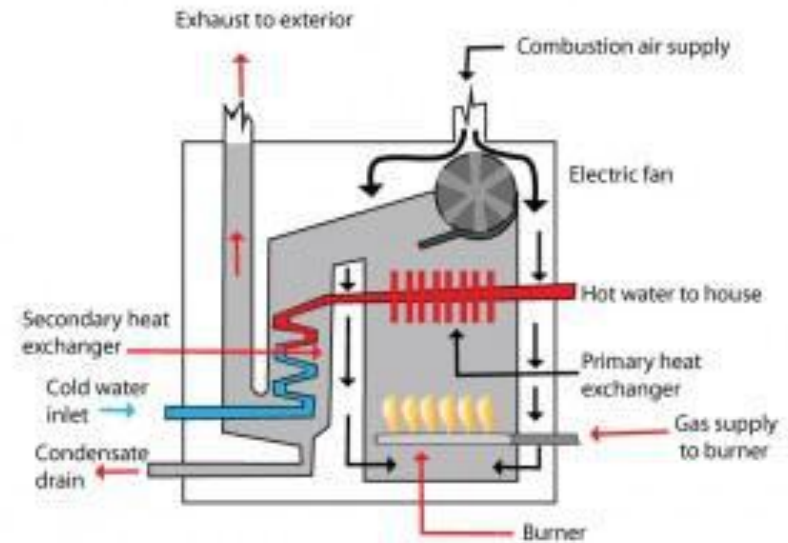
Examples of heat wasted while meeting the process demand

WHERE IS HEAT WASTED IN AN INDUSTRY?

- Heat wasted in industry in processes and in utilities



Gas turbine

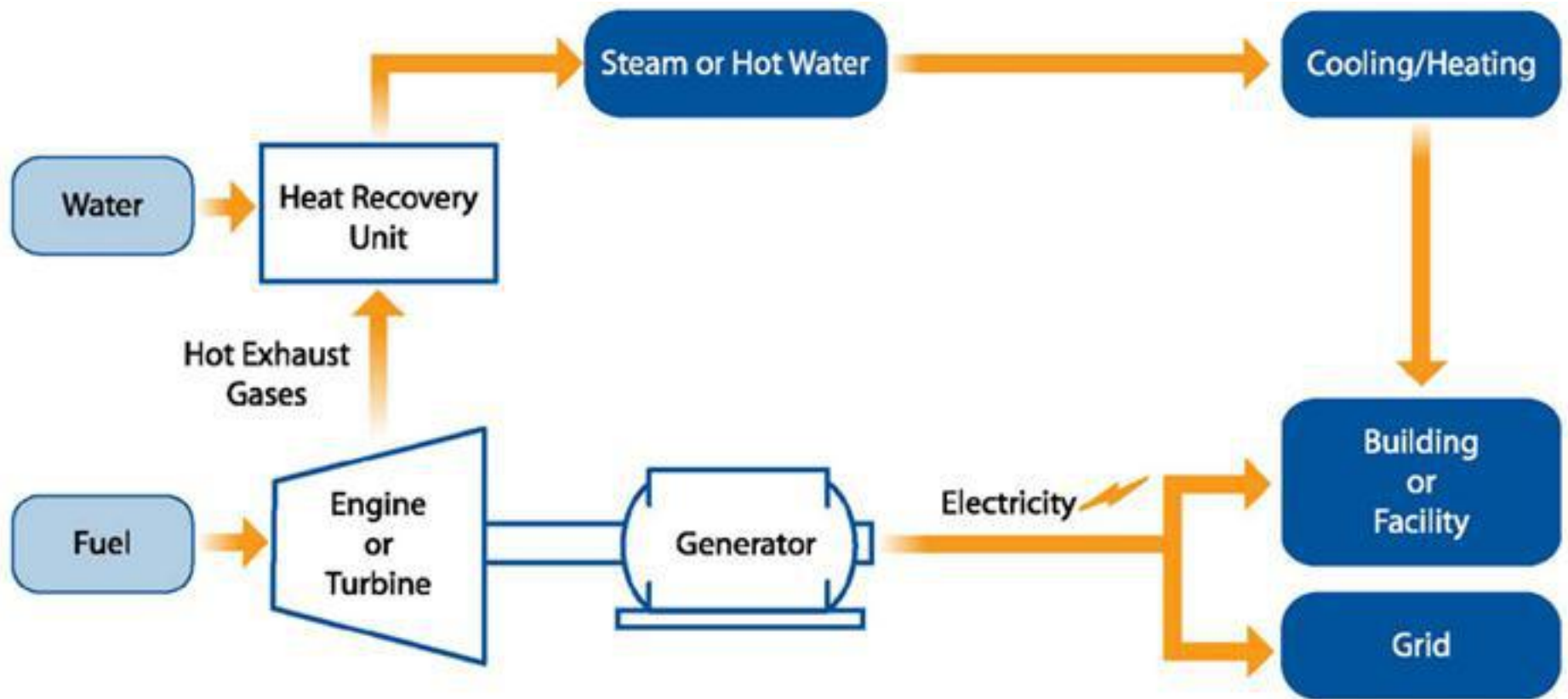


Boiler

Example of heat wasted during energy conversion in utilities

EXAMPLE OF HEAT RECOVERY TO MINIMIZE FUEL COST

Heat recovery from gas engine/turbine to reduce fuel demand

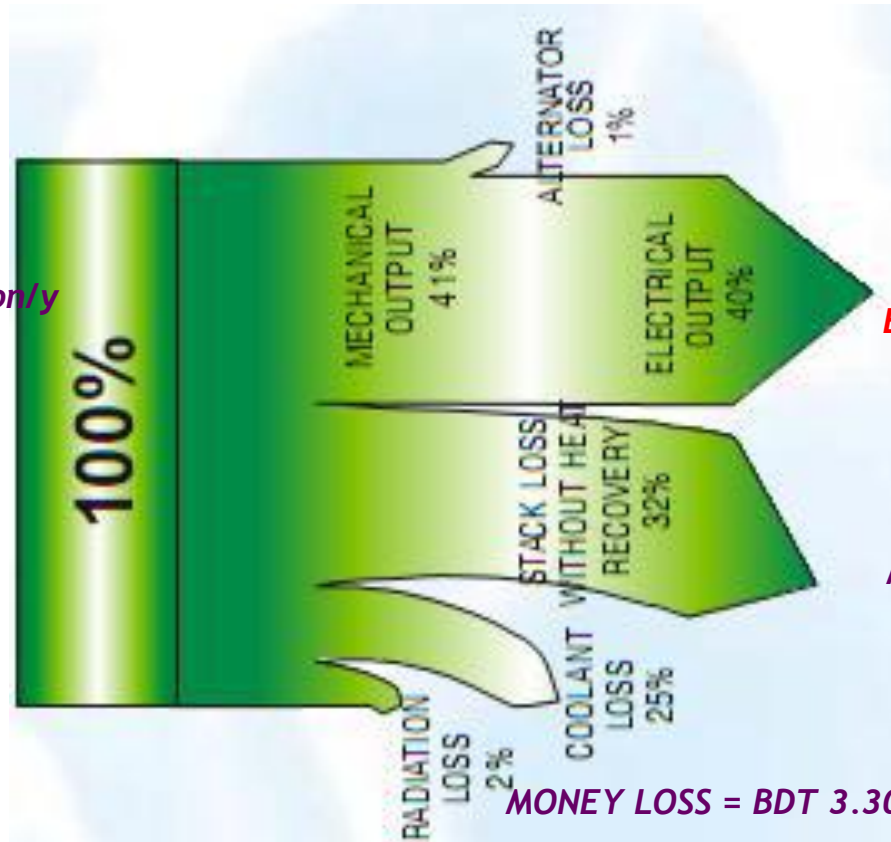


EXAMPLE OF HEAT RECOVERY TO MINIMIZE FUEL COST

Performance of an efficient 1 MW gas engine*

INPUT

Gas cost = BDT 12.24 million/y



OUTPUT

Elec. value = BDT 4.90 million/y

MONEY LOSS = BDT 3.92 million/y

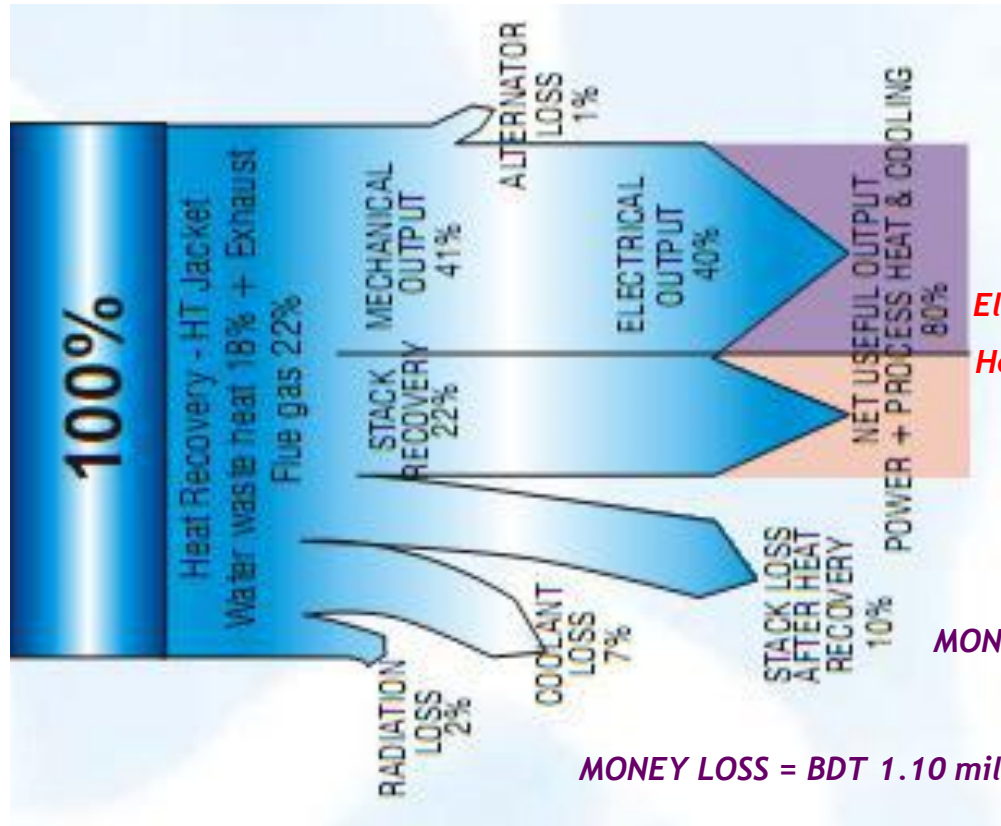
MONEY LOSS = BDT 3.30 million/y

* Average cost of gas purchased at BDT 7.5/Nm³, 75% load, 24 hours of operation during 340 days in a year

EXAMPLE OF HEAT RECOVERY TO MINIMIZE FUEL COST

Performance of the gas engine after modifications*

INPUT
Gas cost = BDT 12.24 million/y



OUTPUTS

Elec. Value = BDT 4.90 million/y

Heat value = BDT 4.90 million/y

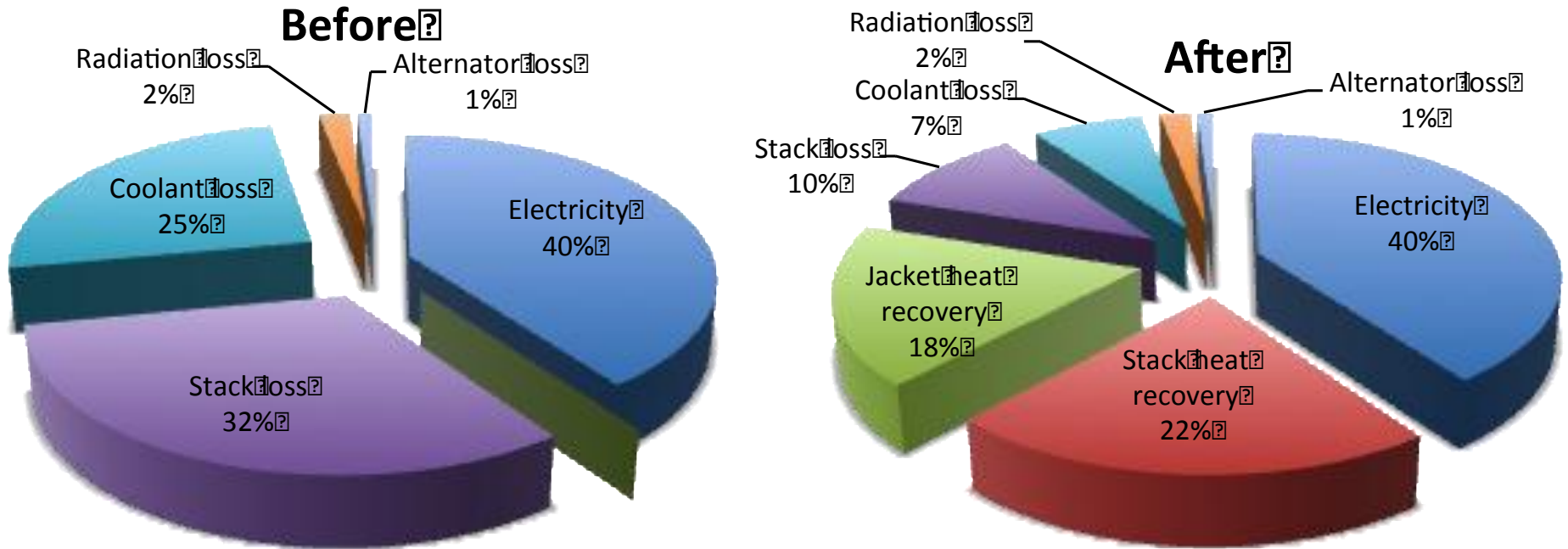
MONEY LOSS = BDT 1.22 million/y

MONEY LOSS = BDT 1.10 million/y

* Average cost of gas purchased at BDT 7.5/Nm³, 75% load, 24 hours of operation during 340 days in a year

EXAMPLE OF HEAT RECOVERY TO MINIMIZE FUEL COST

Comparison of performance before and after installation of heat recovery systems



40% reduction of gas use will need investment that will be recovered in less than 2 years!

Resource Efficiency Financing Approach

BENEFITS OF RESOURCE EFFICIENCY PROJECTS

• Financial

- Reduced operating costs;
- Reduced energy bills;
- Improved cash-flow and higher profit margins;
- Loan repayment solely based on energy bill savings

• Operational

- Improved management of facilities;
- Increased equipment reliability and availability;
- Improved productivity and product quality

• Environmental

- Lower emissions
- Better waste management

RESOURCE EFFICIENCY PROJECTS: LOW RISK

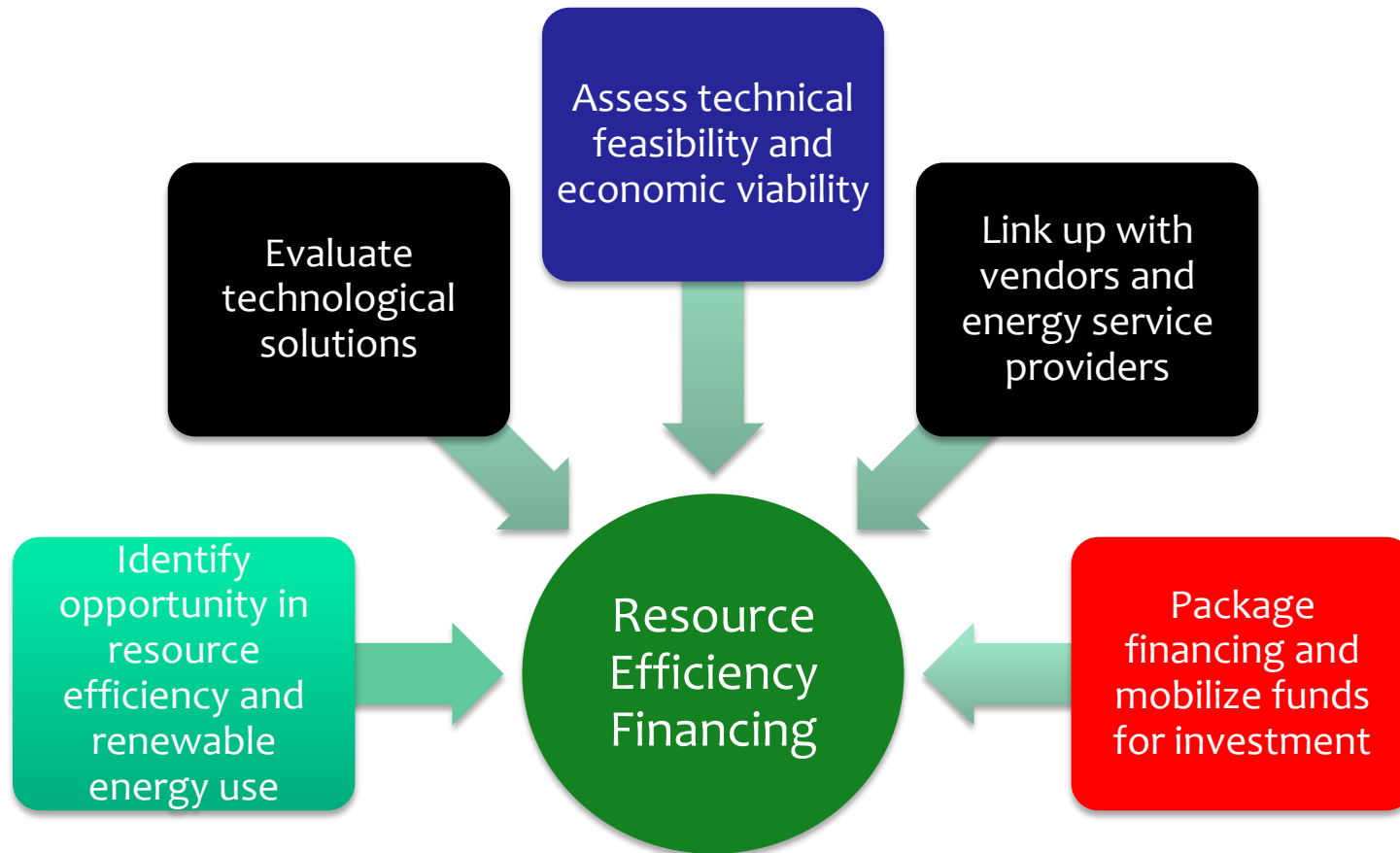
• Low-risk returns

- Equipment/technologies well proven
- Energy savings calculated using reliable and proven techniques
- IPMVP (International Performance Monitoring and Verification Protocol) used to verify and monitor performance

• Long-term returns

- Use of EE equipment and technologies generates a stream of benefits and improves effectiveness of the whole production line
- Lifetime of most EE equipment typically in the range of 7-10 years

WHAT CAN A BANK'S REF PRODUCT OFFER?

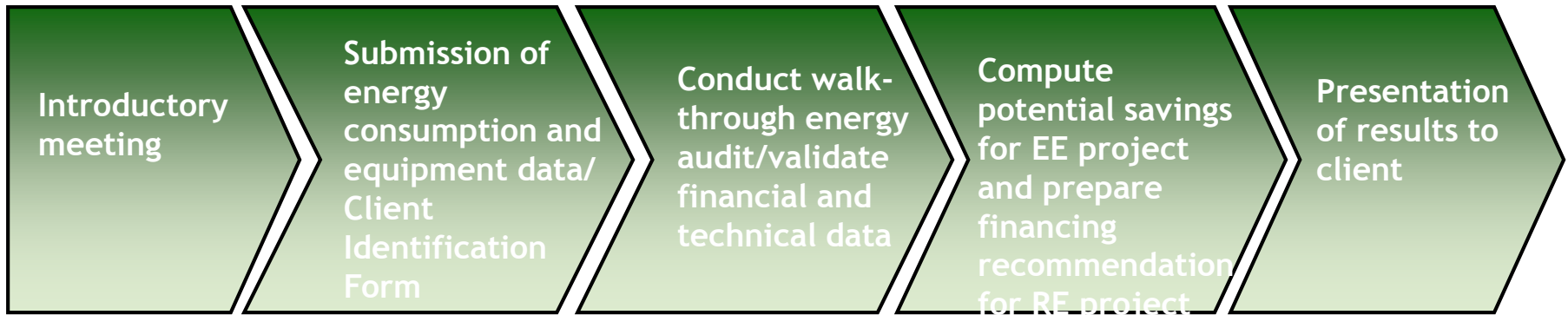


Offer A to Z financing solutions to EE, RE and Cleaner Production

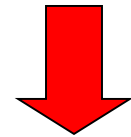
HOW CAN A BANK WORK WITH THE CLIENT?

Exploratory meeting;
commitment to pursue

Client Decision



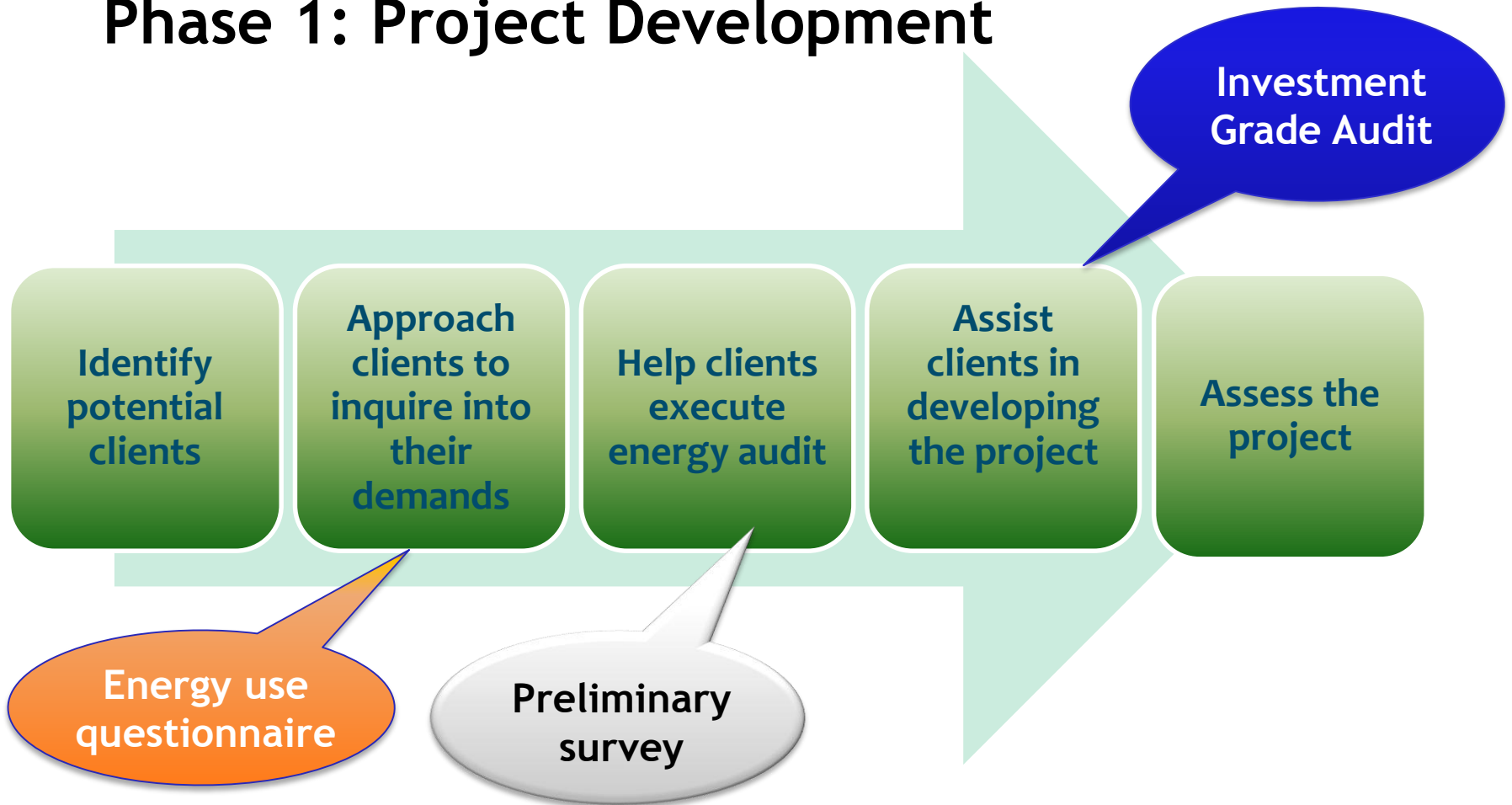
Bank assists the client in the energy investment by providing an appropriate financing program for a sustainable energy project.



REF goes through usual Financing Procedures

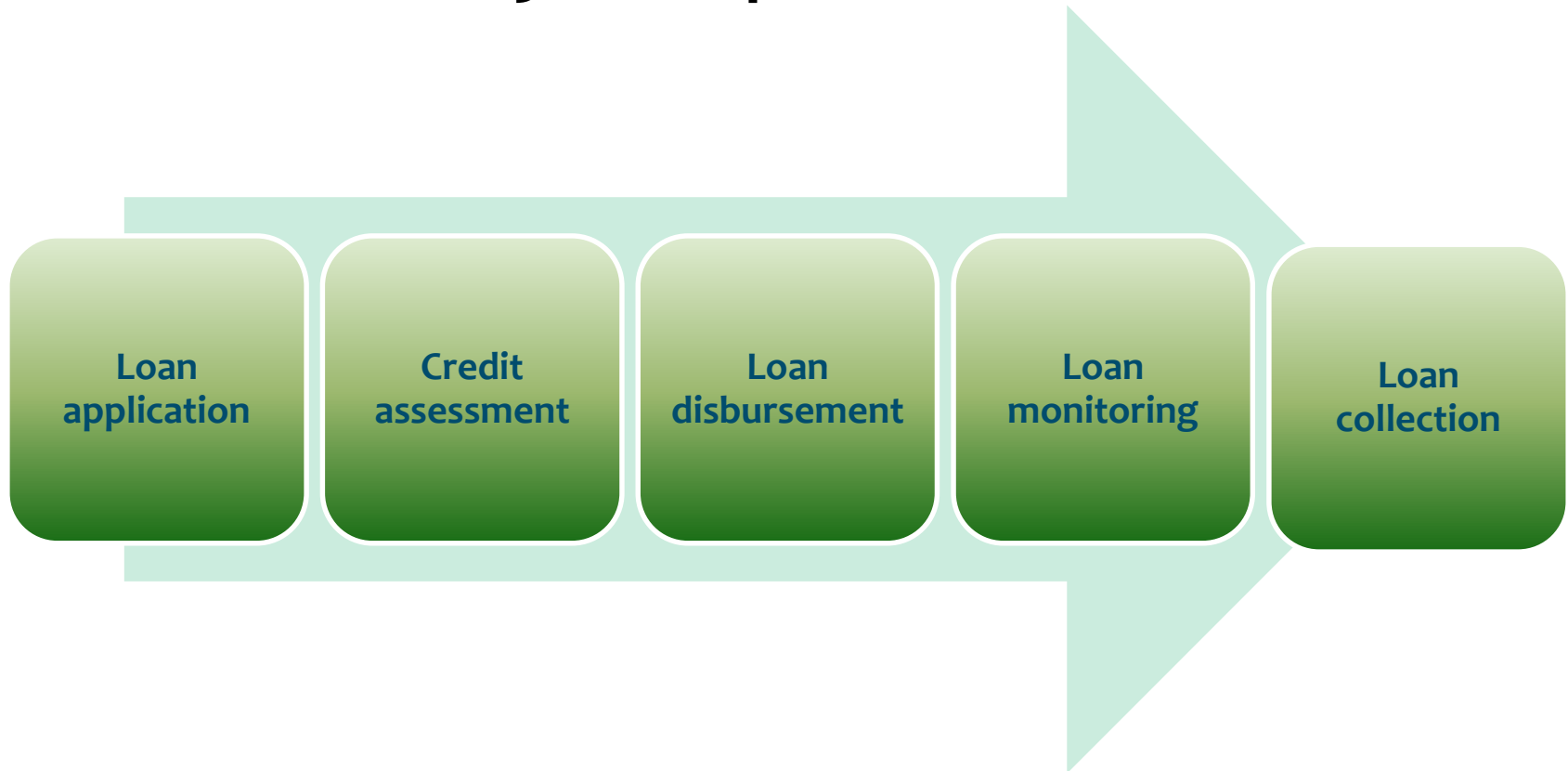
PROCEDURE FOR REF BY A BANK (1)

Phase 1: Project Development



PROCEDURE FOR REF BY A BANK (2)

Phase 2: Project Implementation Phase



Case Study of Resource Efficiency Financing

BACKGROUND INFORMATION

- **Sector:**

- Ready-made garment (RMG)

- **Client:**

- Export oriented RMG company with a state of the art factory, involved in the production of textile and garment, dyeing and processing of fabrics

- **Project:**

- Improve energy efficiency in the existing facility

- **Financial Product:**

- BDT 25 million term loan

- **Bank:**

- Dedicated Green Finance Team, seeking to expand the green finance portfolio



CLEANER PRODUCTION ASSESSMENT

- **Preliminary and in-depth cleaner production assessment:**
 - High water consumption
 - Potential resources and energy saving potential in the dye house
- **Identified measures through investment grade energy audit with USAID support:**
 - Online efficiency monitoring system for boilers with oxygen trim
 - Insulating steam valves/flanges/fittings
 - Replacing vacuum tables with start-stop tables
 - Replacing T8 tubes with LED tubes
 - Installing steam traps and utility flow meter monitoring system

BANK'S ROLE AFTER DUE DILIGENCE

- **Bank identified four types of credit facilities to meet the client's needs:**
 - Foreign currency term loan
 - BDT commercial term loan
 - BDT term loan under the **Bangladesh Bank green banking refinancing scheme**
 - USAID energy grant
- **Loan offered by the bank to the client:**
 - Simplified the loan application process and management approval within a week
 - Structured a blended model of financing that facilitated finance at attractive terms
 - Loan repayment secured only using personal and corporate guarantees; no need for any collateral

PROJECT COSTS AND BENEFITS

- **Investment and bank financing:**

- Total investment: USD 139,350
- Bank financing: USD 126,580
- Estimated simple payback period: around 4 years
- Loan tenor: 5 years



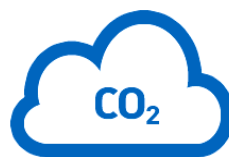
- **Expected annual benefits of the project:**



•160,000 m³



•66,000 kWh



•390 MT



•USD 31,000

Conclusions

LESSONS LEARNED

Lesson learned from REF Projects

- Most energy intensive industries are content with the status quo of their core business and do not care about energy
- **Strong commitment** from project owner and senior management is essential
- Return on sustainable energy project is most often higher than return from core business
- Avoided energy cost is sufficient to pay sustainable energy investment (loan)
- IGA from **experienced energy service provider** is critical to offer financing against guaranteed saving scheme
- **Strong technology supplier** is a must to procure high quality energy saving product at affordable price from international market

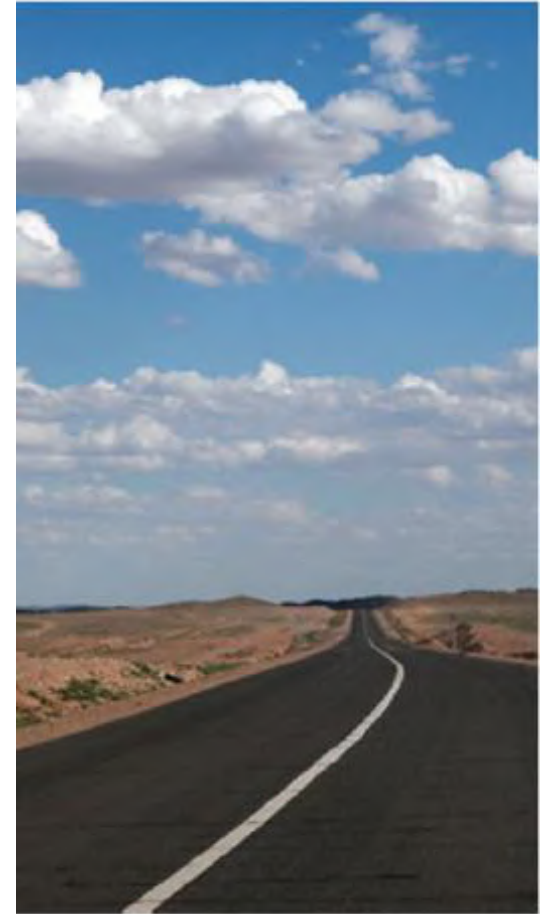
WIN-WIN SOLUTION FOR THE BANK AND THE CLIENT

- **Benefits to the client:**

- Easier access to funds and lower cost of funds
- Improved E&S performance
- Further financial access to the bank's green finance portfolio
- Enhanced reputation and market access

- **Benefits to the bank:**

- Financial benefits
- Gaining technical knowledge
- Enhanced reputation and brand value
- Further expansion of the bank's green finance portfolio



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