

MODULE: 2

PERFORM, ACHIEVE AND TRADE (PAT)



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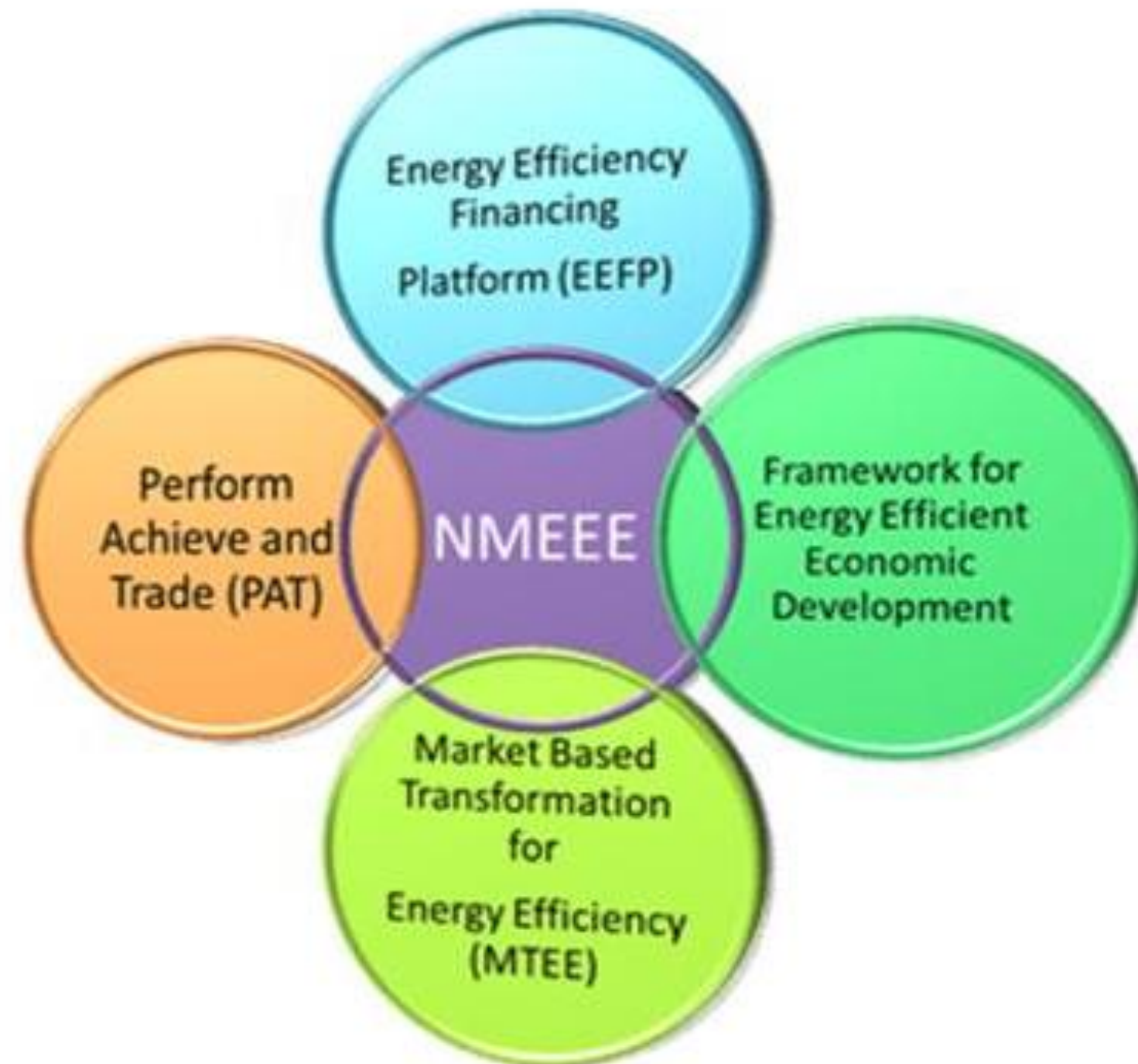
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INTRODUCTION

OBJECTIVE



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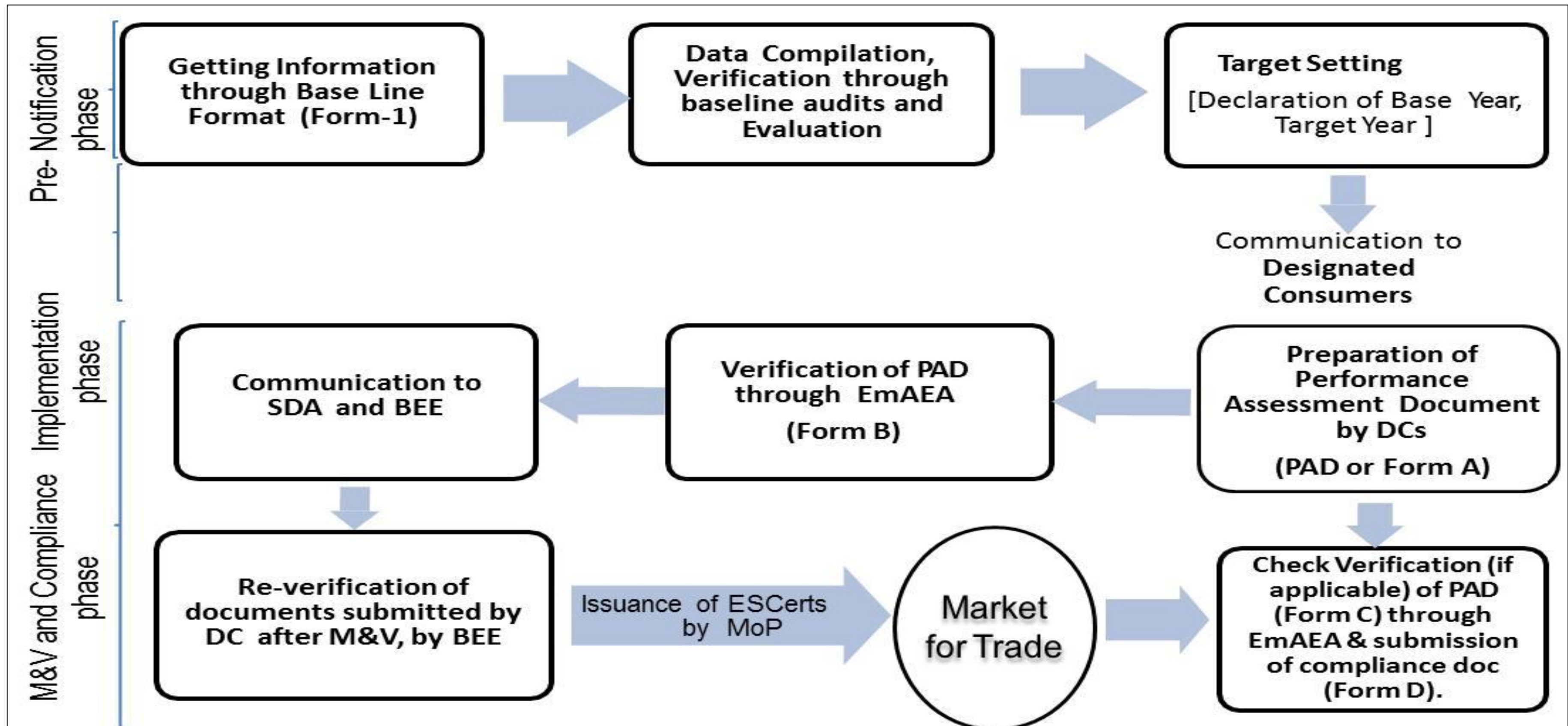
Introduction

- National Mission on Enhanced Energy Efficiency (NMEEE) is one of the eight missions which formed India's National Action Plan on Climate Change (NAPCC).



PAT CONCEPT

PAT CONCEPT



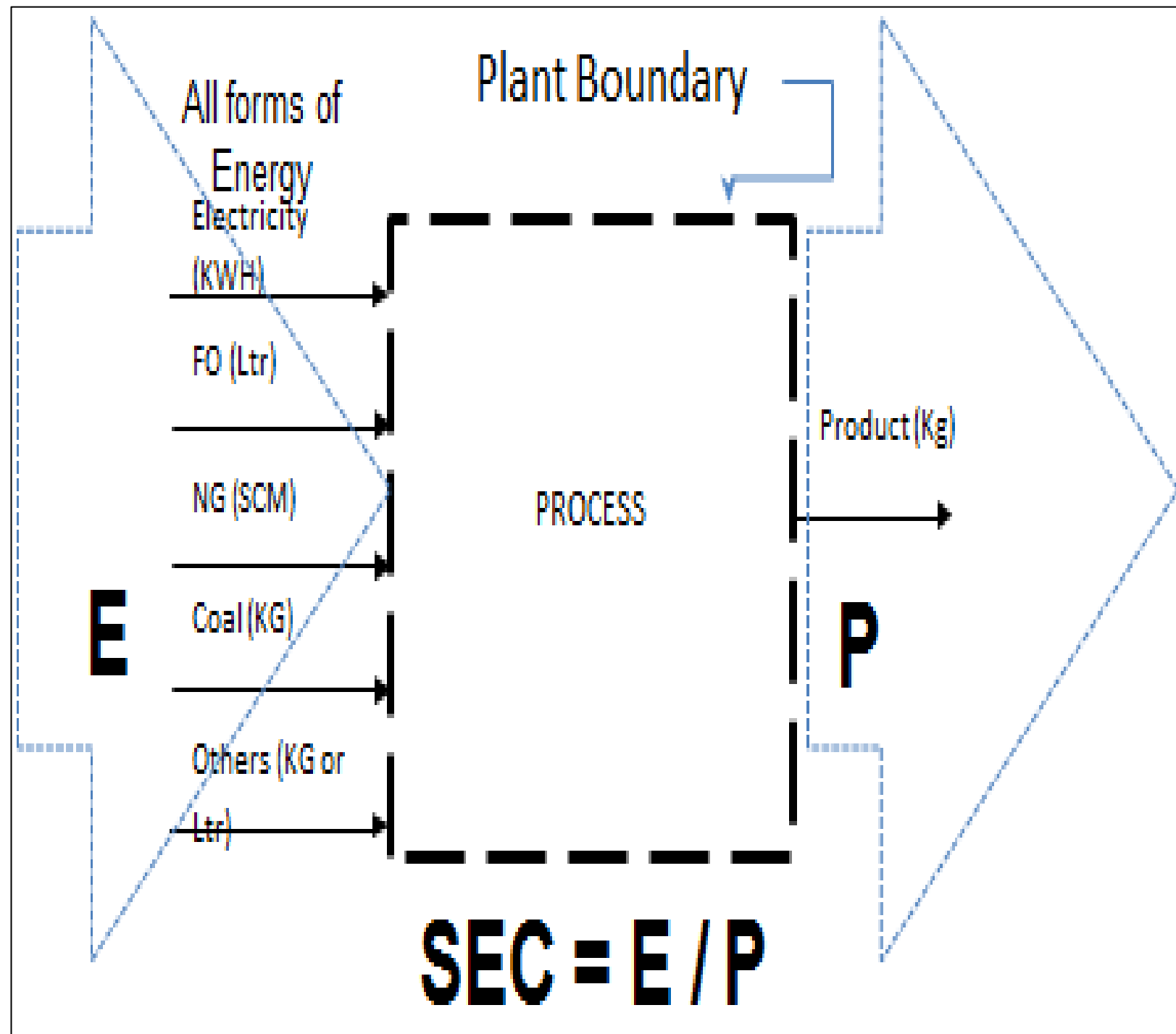


BASELINE ASSESSMENT

1

Introduction

- PAT study begins with assessment of baseline specific energy consumption (SEC) using Form-1.
- SEC is calculated on a Gate-to-Gate (GtG) concept after determining the plant boundary.
- Energy consumption and production details are collected in sector specific pro-forma from DCs.
- The baseline is reviewed and evaluated by BEE in consultation with relevant sector specific technical committee, and target SEC along with target year is notified and communicated to DCs.



NORMALIZATION

- Normalization is a process of rationalization of the energy and production data considering the impact of quantifiable external variables that are beyond the control of the DCs.

Internal Factors for Normalization

- Capacity utilization
- Product mix & intermediary product
- Fuel mix (e.g. Pet coke utilization in kiln)
- Power mix Fuel quality in CPP
- Low PLF in CPP
- Raw material quality
- Biomass/Alternate fuel unavailability
- Addition of new line/Unit
- Renewable energy

External Factors for Normalization

- Grid failure/Breakdown (Grid not synchronized with CPP)
- Natural disaster (flood, earthquake etc.)
- Major change in Government policy (affecting plant process system)
- Environmental concerns (additional environmental equipment requirement due to major change in government policy on environmental requirements)
- Unforeseen circumstances (labour strike / lockouts / social unrest / riots)



VERIFICATION

The verification involves review of Sector Specific Pro-forma, Form 1 and Summary Sheet.

The following forms are to be submitted by the concerned DC and EmAEA:

- Sector Specific Pro-Forma and Form I by DC.
- Performance Assessment Documents (Form A) by DC.
- Certificate of Verification (Form B) by EmEA.
- Compliance of Energy Consumption Norms Document (Form D) by DC.

The Sector Specific Pro-forma covers following aspects of GtG information:

- Production and capacity utilisation details
- Section-wise details of various products
- Electricity and renewable energy consumption
- Power generation (DG/GG/GT/STG/Cogeneration/WHR)
- Fuel consumption (Solid/Liquid/Gas/Biomass, and others)
- Heat rate of different power sources and coal quality
- Miscellaneous data for normalization
- Installation of additional equipment to protect the environment
- Project activity details
- Summary sheet
- Normalization calculation sheets

PROCESS OF VERIFICATION

Form 1

Form 1 contains details of Information regarding total energy consumed, production, and specific energy consumption per unit of production.

Form A

Form A is the Performance Assessment Document (PAD) prepared by the DCs in the assessment year for monitoring and verification.

Form B

Form B is the certification of verification by EmAEA on completion of M&V study in the assessment year.

Form C

Form C is the certification of cross-verification by EmAEA.

Other Forms to be submitted by DC under EC Act:

Form-2: Details of energy savings measures recommended in mandatory energy audit report. This will be submitted to the SDA with a copy to BEE within specified period of time.

Form-3: Details of energy efficiency improvement measures implemented, investment made and savings in energy achieved and progress made.

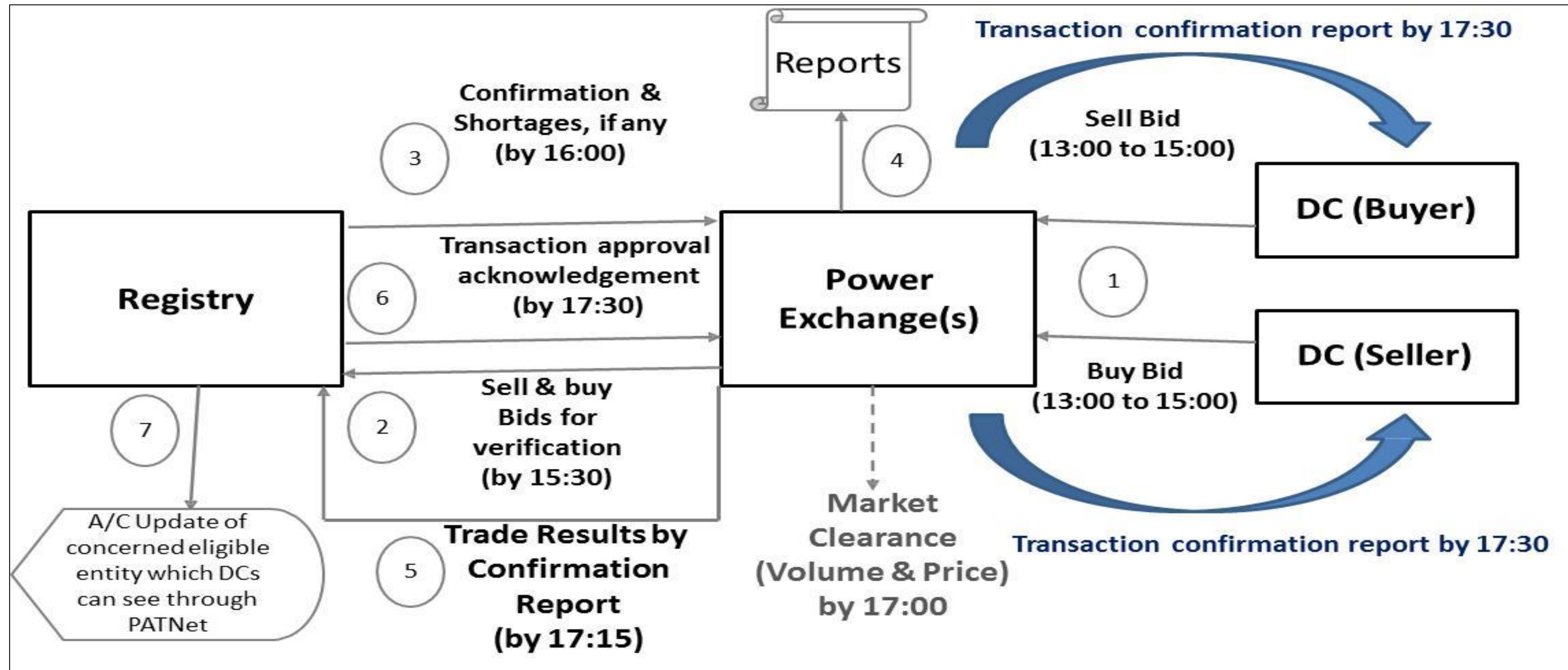


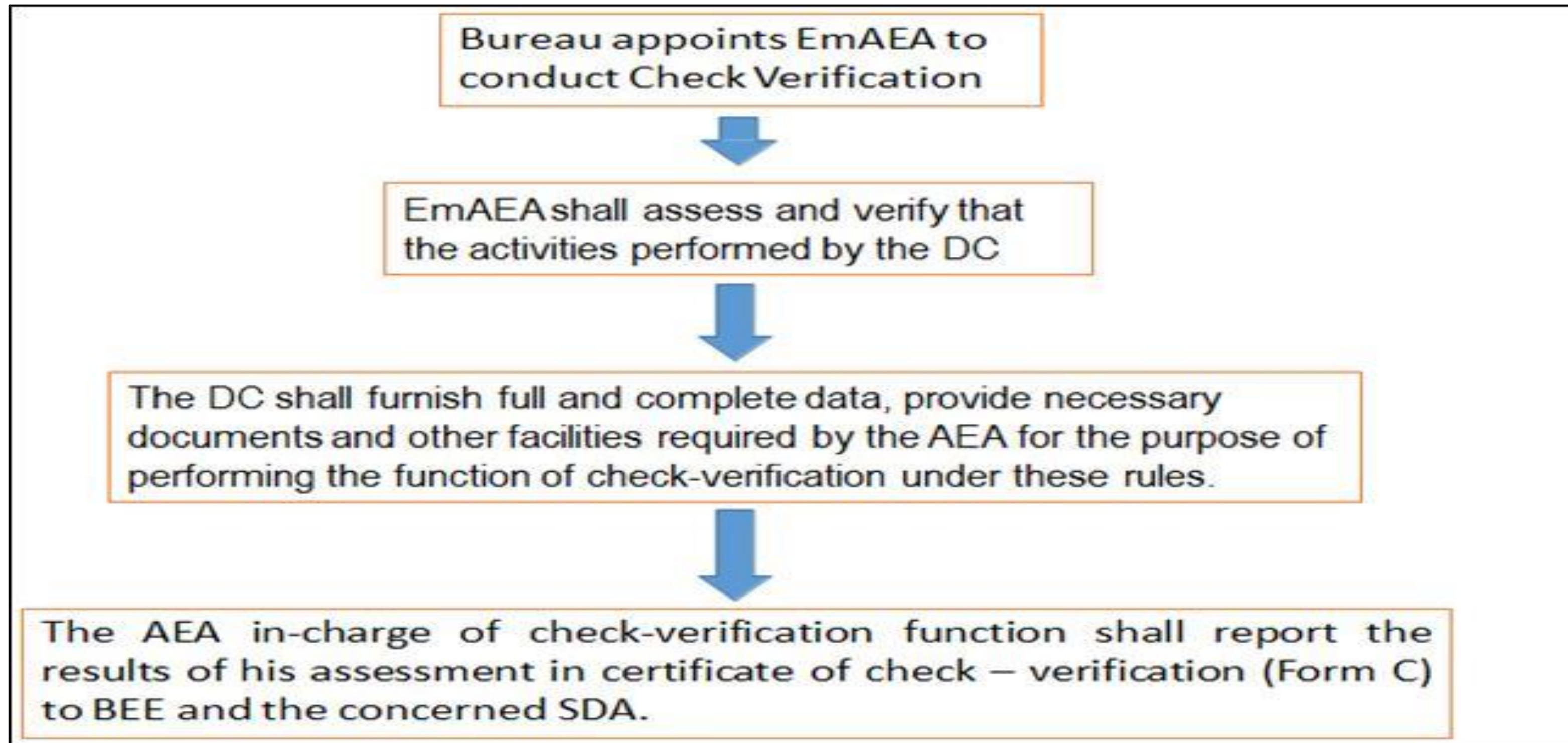
CERTIFICATION OF ENERGY SAVINGS

It is the process of certifying the verification report or the check-verification report by the Empanelled Accredited Energy Auditor (EmEA). The report is reviewed by BEE before recommending the energy savings.

The procedure for issuing of ESCerts is as follows:

- Central Government—after receiving recommendation from Bureau (BEE) – issue ESCerts of desired value to DC within 45 days.
- ESCerts are issued in electronic form.
- ESCerts issued in current cycle is valid till compliance period of next cycle.
- DCs who have been issued energy savings certificates may sell them through the power exchange.
- ESCerts purchased by DC for compliance shall after their submission to Bureau stand expired.





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PAT Achievement

- PAT-I cycle has achieved an energy saving of 8.67 million tonne of oil equivalent. The table shows achievements of PAT-I.

| S. No. | Sectors | No. of DCs | Target Reduction (MTOE) | Savings (MTOE) | % Increase |
|--------|---------------------|------------|-------------------------|----------------|------------|
| 1 | Aluminum | 10 | 0.46 | 0.73 | 59% |
| 2 | Cement | 75 | 0.82 | 1.44 | 76 |
| 3 | Chlor- Alkali | 22 | 0.05 | 0.13 | 100 |
| 4 | Fertilizer | 29 | 0.48 | 0.83 | 73 |
| 5 | Iron & Steel | 60 | 1.49 | 2.10 | 41 |
| 6 | Paper & Pulp | 26 | 0.12 | 0.26 | 117 |
| 7 | Textile | 82 | 0.07 | 0.12 | 71 |
| 8 | Thermal Power Plant | 123 | 3.21 | 3.06 | -5% |
| | Total | 427 | 6.69 | 8.67 | 29% |

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