



INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

Electrical Energy Efficiency (E³), Renewable Energies and the role of the IEC



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Why are E³ and RE so “hot”?

- **Climate Change Studies**
- **Electricity is a fundamental need for today's world**
- **World will require more electricity as population and development increases**
- **IEC is creating framework for making efficient use of electricity and for generating electricity from renewable energy sources**

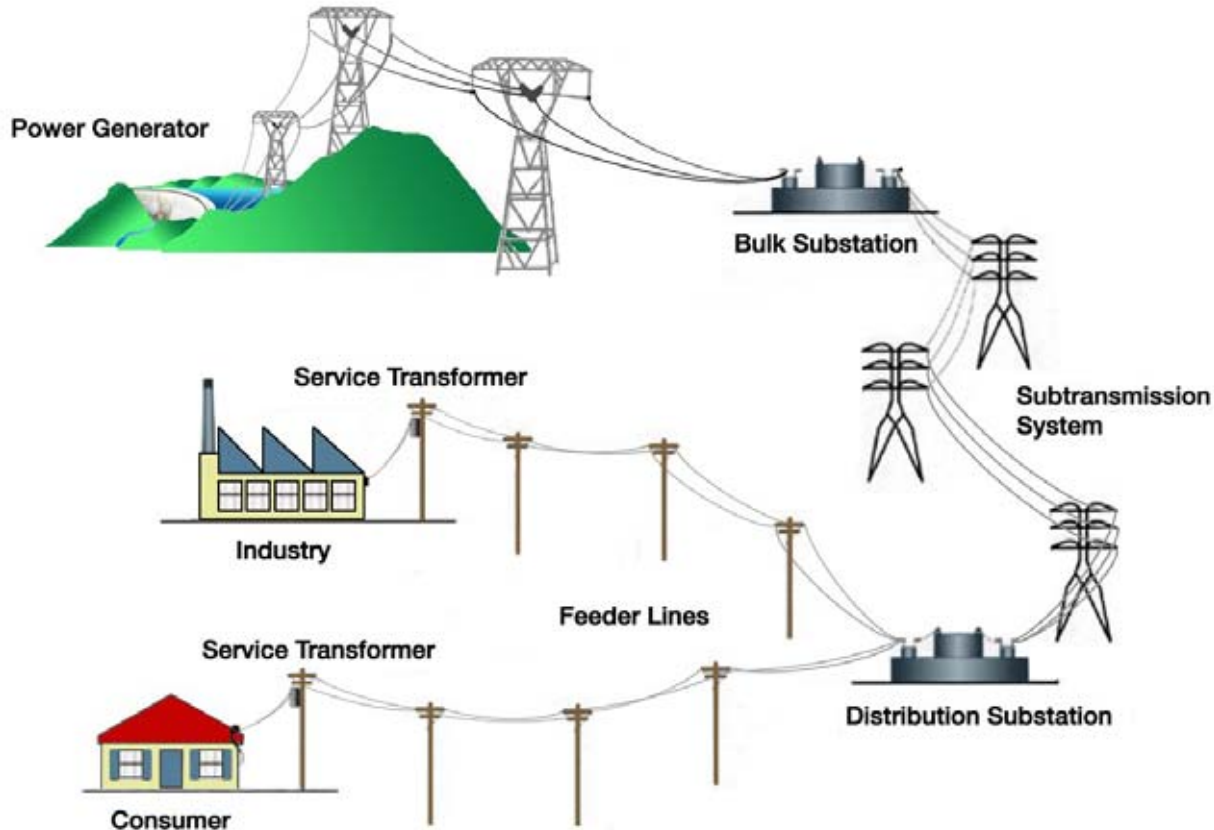
The IEC view of electrical energy...

Rotating machinery
(TC 2)

Hydraulic turbines
(TC 4)

Overhead lines
(TC 11)

Overhead electrical
conductors (TC 7)



Systems aspects
for electrical
energy supply
(TC 8)

Switchgear and
controlgear (TC 17)

Electric cables
(TC 20)

Insulators
(TC 36)

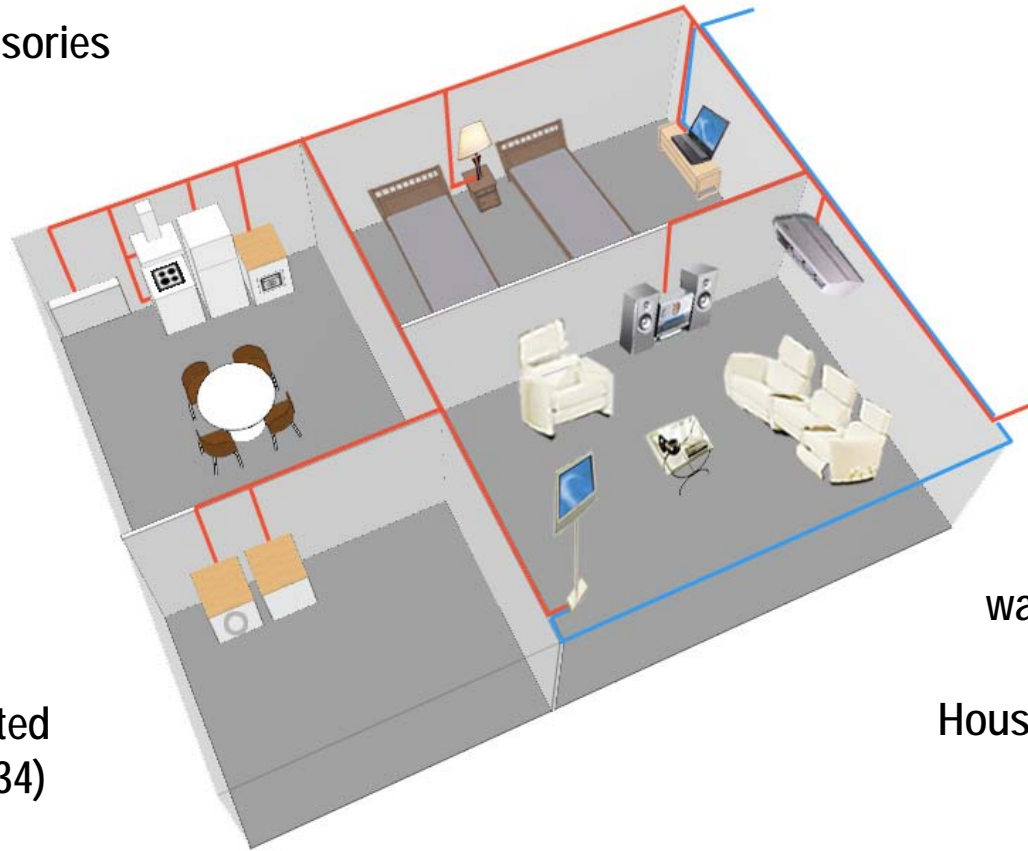
Surge arresters
(TC 37)

And in the home...

Electrical accessories
(TC 23)

Electric cables
(TC 20)

Lamps and related
equipment (TC 34)



Multimedia
(TC 100)

Fibre optics
(TC 86)

Cables, wires,
waveguides (TC 46)

Household appliances
(TCs 59 & 61)



So IEC covers wide spectrum

- **Construction – *integrating electrical energy efficiency***
- **Consumer goods – *getting the performance using the least power***
- **Electricity generation, transmission and distribution – *reducing losses even further***
- **Electronics – *integral part of all aspects***
- **Environment**
- **Heavy industry – *biggest users of electricity***
- **Information technology**
- **Manufacturing – *cutting energy helps reduce costs***
- **Testing and certification – *proving the equipment and systems deliver***



Efficiency is part of our DNA

- **IEC founded to improve energy efficiency**
- **Demand for electricity has increased but some 1,6 billion people live without it**
- **IEC role is to facilitate use, and get best out of systems and products**



Energy efficiency and functionality

- **Energy efficiency is part of “functionality” of electrotechnology**
- **Efficiency means different things to different people**
- **In our “simple” engineering terms, efficiency equals:**

Output

Input

Portfolio analysis and priorities

- IEC Standards in energy efficiency are effective
- But we need to improve awareness of IEC Standards
- Prioritize areas of development and promote to new stakeholders



- **Ultra high voltage**
- **Pump systems**
- **Rural electrification to meet needs of developing nations**
- **Standby power settings**





Renewables at the IEC

Wind



Solar



Marine



Hydro





Where the BIG savings are

- **System approach rather than component**
- **IEC will now focus on “areas of high significance”**
- **Standards for testing and measurement**
- **Definition of efficiency levels**

Supply Chain Matrix*

Supply chain / Application fields	Power Generation	Power Transmission	Power Distribution
Lighting	■	■	■
Rotating machinery	■	■	■
Heating Cooling	■	■	■
Data processing	■	■	■

- high significance
- medium significance
- low significance
- no significance

Energy efficiency significance per application field

*Source: IEC SMB Document 3598/INF

Consumption / Application fields	Industrial	Commercial buildings (tertiary)	Domestic	Transport
Lighting	High significance	Medium significance	Medium significance	High significance
Rotating machinery	Medium significance	Low significance	Low significance	Medium significance
Heating Cooling	Medium significance	High significance	High significance	No significance
Data processing	High significance	High significance	Medium significance	High significance

- high significance
- medium significance
- low significance
- no significance

Energy efficiency significance per application field

*Source: IEC SMB Document 3598/INF



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The IEC is delivering an A+ in electrical energy efficiency and renewables.



Thank you.