MARCH 2022

CEE COMP NEWSLETTER N°5

Question of the month

How often is it recommended to clean the air conditioning?

To find out the answer, go to page 9!

C.E.E comp

POWERED BY CUBE

Organised by

I.T.C. sevea

With the support of

CAMBODIA CLIMATE CHANGE ALLIANCE

Implemented by: Funded by:

Sverige

Schneider Electric

In partnership with

(Energy)Lab

a4mt ACTION FOR MARKET TRANSFORMATION

EUROCHAM CAMBODIA

LiGER

CONTENTS

EDITORIAL

Chloé Deparis
Project Manager

Dear readers,

We are now **more than half-way through the competition**, and I am happy to see that you all **continue to progress** in the understanding of your buildings and in implementing creative activities to save energy.

Our team was also very excited to see your commitment to the competition, your inventivity and your eagerness to share your experience and to learn from each other during our second candidates meeting. Next candidates meeting, we will make sure to leave more time for the knowledge-sharing workshops!

While the hot season will be a challenge, energy efficiency is now more relevant than ever, to reduce energy waste and mitigate the increase in your energy bills. Don't hesitate to raise any challenge you might encounter, so that we can support you in identifying corrective measures.

As for me, I will be leaving Cambodia and the CEE Comp project for new adventures. It was a pleasure to work with you on this first edition of the CEE Comp, and I am excited to see the results that you will all achieve!

I will leave the project in the hands of Laura Pretto, who will replace me as Project Manager. As for the rest of the team, don't worry they will stay the same!

In this newsletter, you will find the **podiums of February**, as well as articles on the Cambodia Energy Efficiency competition and on solar energy.

Enjoy your reading and happy Khmer New Year!

FEBRUARY RANKING

Green Team of the month

The green team of March is LBL CONSTRUCTION

The LBL green team began the competition with a walking audit that included an internal inventory of air conditioners, lights, and screens. Following this, they implemented several actions to raise awareness among all occupants:

- Create a dashboard to display information about the CEE Comp as well as their energy consumption and savings.
- Provide employees with an “idea box” so they can propose actions to improve energy efficiency.
- Put stickers on the walls near light switches and air conditioners to remind people to turn off electrical equipment when leaving.
- Encourage everyone to set the air conditioning set point at 25°C.
- Share a daily article or a tip to build knowledge on energy efficiency

As a next step, they plan to send a survey to everyone to find out how people feel about these first actions.

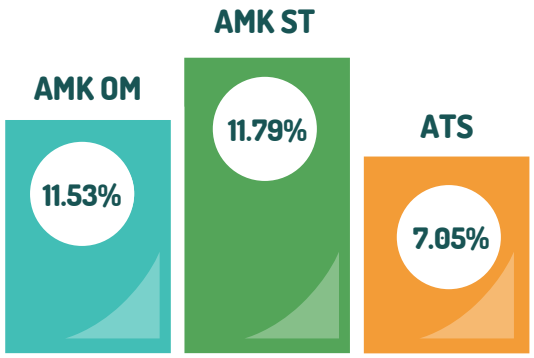
Moreover employees record the A/C set point and the real temperature in the various departments twice a day. The data is collected in an excel file and the purpose is to make statistics.

The LBL green team also organized presentations to explain the stakes of energy efficiency: what are the consequences of our energy consumption on the planet and why it is important to try to reduce it? They also give some tips, for example by explaining the functions of the air conditioning remote control and by distributing memo cards.

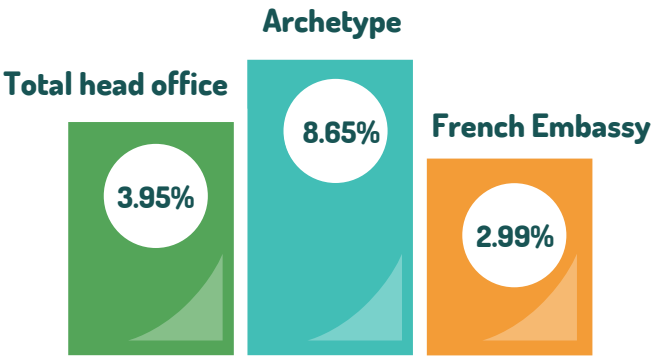
Currently, a measurement campaign is underway in the office. It should allow the green team to better understand the building electricity consumption and help to find new levers of action.

RANKING OF EACH CATEGORIES

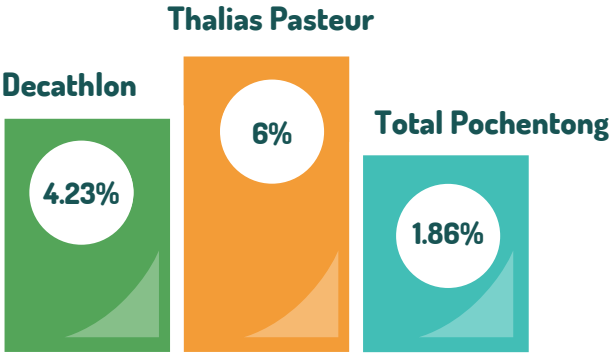
CATEGORY 1



CATEGORY 2



CATEGORY 3



Three building categories prizes

Considering the diversity of the buildings participating in the CEE Comp, we have **chosen to create 3 building categories** to make the competition fairer. These categories have been defined according to the nature and use of each building. At the end of the competition, there will thus be **one winner per category!**

CATEGORY 1	CATEGORY 2	CATEGORY 3
• Airport Admin • AMK Olympic • AMK OM • AMK ST • ATS • DHL • LBL	• AMK head office • Archetype • BRED Bank • Comin Khmere • French Embassy • EuroCham • HEINEKEN • Total head office	• Airport Cargo • Decathlon • Smart • Thalias La Poste • Thalias Pasteur • Thalias Topaz • Total De La Gare • Total Pochentong

Special prizes

- **The best overall communication:** The building that best communicates both internally and externally will win this special award
- **The best green team:** The green team most involved during the whole competition will be rewarded.
- **The best energy savings of the portfolio:** For multisite organizations, we will reward the building that will save the most from your portfolio!

PARTICIPANT FEEDBACKS

We are delighted to share with you the CUBE experience of the **Porte Neuve administrative complex.** This building is a multi-occupant site of about 7200m² with more than 200 occupants. It houses the departmental directorate of territories, the departmental directorate of population protection, and the French office of biodiversity. With 13.15% energy savings, the building is ranked 26th in the general classification and 1st in its category "government building".

When the competition was presented, management was very motivated to lead the project. However, the reality on the ground (daily imperative, lack of time…) brought some difficulties.

How can we engage all occupants in energy savings when most of them don't have the time and/or are working remotely?

In such a situation, one of the solutions is to raise awareness through digital means (emails, applications, online games, digital interactions...). But to avoid that the mailboxes are full and that the mails go unnoticed, it is preferable that the **animation remains dynamic and playful!**

The Porte Neuve administrative complex has found sustainable, playful, and effective solutions to involve and educate all people, with different profiles, ages, and backgrounds.

The competition also inspired the building to **broaden the awareness of more global issues related** to sustainable development, such as waste management.

Porte Neuve complex

- ***> 200** occupants*
- *Surface: **7200 m²***
- ***13.15%** energy saved*
- ***26th** in the ranking*

PARTICIPANT FEEDBACKS

Communication

- *Start CUBE by organizing a thematic coffee including the presentation of the competition, the feedback of a study center that lead the building audit and an interactive intervention of an association specialized in renewable energies.*
- *Distribution of advice on ecological practices*
- *Raising employee awareness via regular news flashes every 20 days on thermal comfort, lighting, teleworking, paper, pollution caused by digital technology, etc.*
- *Broadcasting of the web series “Planet Office”*
- *Communication via the internal newsletter of the Departmental Directorate of Territories*
- *An action around the use of wattmeter in the different departments to measure the consumption of electrical appliances, especially those on standby*
- *The organization by an association of two interactive animation stands on the theme of energy including an exhibition.*

Technical actions

The audit of the building and the installation of thermal & humidity sensors led to the implementation of actions to optimize the management of the installations such as :

- *Optimization of the use of HVAC elements during weekends & non-working hours*
- *Change of the exterior lighting to twilight lighting with a programmed extinction from 22pm to 6:30 am*
- *Replacement of the bulbs with LED lighting*
- *Maintenance of radiators*
- *Clamping of the thermal valves in the meeting rooms*

CEE COMP'S NEWS

The **second candidate meeting** was held on Wednesday, March 30. Many thanks to our candidate DHL for hosting this event, providing the catering and for giving participants a tour of its premises!

The meeting was divided into two key moments: presentations on the theme of air conditioning, then a workshop during which the candidates were able to talk about their experience of the CEE Comp and their ideas to progress in the competition.

We want to thank Mr. Wilfrid Dutruel, managing director at M.E.P.E, for his presentation on the characteristics, maintenance, and sizing of the air conditioning. In the following page, we come back to the part about the maintenance of the air conditioning.

The second presentation focused on experiments conducted by ATS in their office. These case studies highlighted the importance of behavior change and the choice of electrical equipment. Below are the results of these experiments; we remind you that they were obtained under specific conditions and that they depend on many factors (volume of the room, insulation of the building, etc...):

- ***37%** energy savings by increasing the A/C set point from 18°C to 25°C*
- ***17.9%** energy savings by closing the room door when the A/C is on*
- ***50.3%** energy saving by replacing the non-inverter A/C with an inverter A/C*
- ***53%** energy saving by switching to LED instead of fluorescent lights*

Finally, during the 3Cs workshop, the candidates discussed the activities they had implemented or wanted to test in their building to save energy. They classified them in three categories, those to continue, cancel or create

The cleaning and maintenance of the A/C helps to maintain its operating performance and avoid technological or health accidents. Power meter record shows -10% energy savings or more by having cleaned A/C.

Both evaporator and condenser are heat exchangers and need to be cleaned at regular basis.

In the evaporators, different fluids transit, which then turn into gas when in contact with the hot air, absorbing heat. The fluids can carry dirt that settles on the walls of the evaporator.

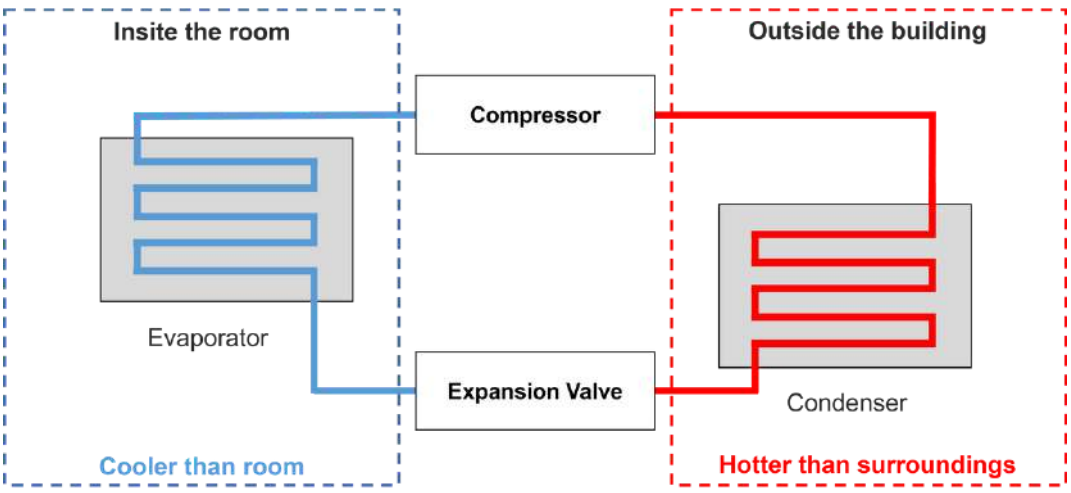
The condenser is the part of the circuit where the refrigerant will turn into a liquid state and cool down. Located outside, the condenser is subject to the environment and the weather. It is thus frequent to see condensers covered with dust, pollen, leaves ...

- Dry months in Cambodia are prone to dust, therefore cleaning external units every 2 months will improve the exchange efficiency
- During Monsoon season, cleaning can be every 3 months because there is less dust in the air.

Maintenance can also help to extend the operation life (but by experience after 7-10 years many components are no longer available for split and VRV). Below are the typical life expectancies:

- Split system: 7 years
- VRV system: 10 years
- Chiller: 20-30 years

.



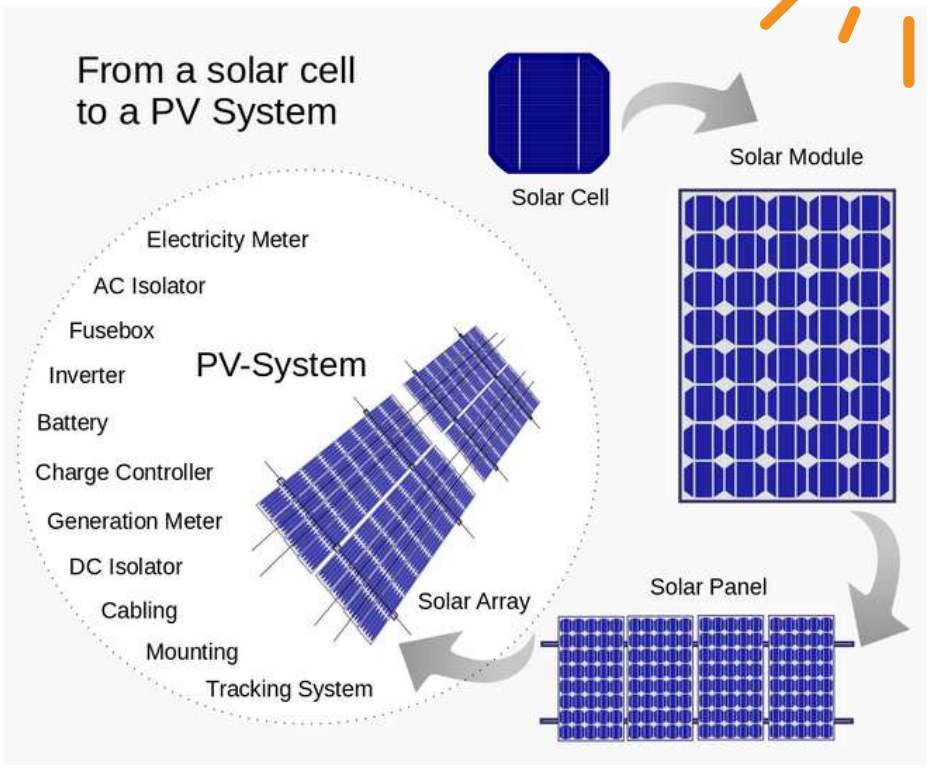
ENERGY CONTEXT

Solar energy is a renewable energy whose principle is to exploit the electromagnetic radiation coming from the sun.

In a country like Cambodia, solar energy can be used in three main ways: through solar farms, through decentralised rooftop solar systems, and through solar technologies (solar home systems, solar lamps, solar water pumps...).

Nowadays, the share of renewable or decarbonized energy is still very low. **In 2020, solar power produced just over 3.2% of the world's electricity.** In 2021, the share of solar in the Cambodian electricity mix was 4.67%.

There are positive signals regarding the development of solar energy in the world. While **renewable energy growth has been strong worldwide**, solar power has taken the lead with 127 gigawatts installed in 2020, the largest annual increase in capacity ever recorded. In addition, according to the latest report from EAC (Electricity Authority of Cambodia), installed solar capacity in Cambodia is expected to increase by 60 MW from 2021 to 2022**.**



There are various advantages and disadvantages regarding solar energy. The main advantages are that solar energy is a renewable energy, low carbon and **without greenhouse gas emissions at the place of energy production**. The installations are more and more affordable, silent and require little maintenance. Finally, for countries such as Cambodia with a very constant sunshine over the year, it is an energy that can easily electrify isolated areas and reduce the Cambodia's carbon footprint.

Concerning the disadvantages, the main one is that there is not always enough sun to produce energy. It is a non-controllable energy, that's why it **can be interesting to install storage batteries**. Also, the **development and strengthening of the recycling sector is necessary** to be able to process future volumes.
In countries like Cambodia, there are also concerns that solar, especially decentralised rooftop systems, will cause local disturbances in the quality of the grid.

In Cambodia, **the use of solar panels connected to the national grid is subject to a legal framework.** First, photovoltaic installations must meet technical requirements and be subject to an authorization procedure by EDC. **It is forbidden to sell the electricity produced on the grid**. The projects authorized by EDC are only for self-consumption.

Only consumers connected to medium voltage (MV) and high voltage (HV) lines or sub-stations are allowed to install solar power systems synchronized with the national grid. This means that **it is forbidden for consumers connected to low voltage (LV) lines to have a grid-synchronised system**. In addition, grid-connected facilities with solar systems will be **charged a specific solar user tariff** (they do not benefit from off-peak energy charges) and the **AC capacity of the system must not exceed 50%** of the EDC's contracted capacity in kW.

All in all, the current regulatory requirements for rooftop solar systems constricts the economic viability of the investment. Unfortunately, in most cases, chances are that **installing solar will not economically make sense for your business.**
Energy efficiency makes all the more sense as it allows you to reduce your energy consumption with far less investment needed!