SEEDS: Energy efficiency training

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SIPLUS | 2nd meeting of the sustainable development network
15 February 2023

Today’s agenda

- Introduction of IFUA Nonprofit Partner
- SEEDS program introduction and how we the idea of the energy efficiency training emerged
- Organisations profile that took part in the training
- Topics covered
- Questions & Answers

IFUA Nonprofit Partner works for enhancing effectiveness, efficiency and social impact of nonprofit organizations, as well as strengthening their sustainable operations

Our model of operation

- **Non-profit** operation **for public benefit** since 2009
- **Nonprofit** and **business know-how**
- Core team members and volunteers **with management consultancy experiences**

We are **part of the corporate social responsibility program** of HORVÁTH IFUA

Nonprofit consultancy

autistic art, BAGÁZS, ERSTE Foundation Roma Partnership, Habitat for Humanity, MENHELY ALAPÍTVÁNY, NEM ADOM FEL, NIOK ALAPÍTVÁNY, REJTETT KINCSEK DOWN EGYESÜLET, ROMA EDUCATION FUND, KÉK·BOLYGÓ ALAPÍTVÁNY, Rosa Parks Alapítvány, BÁTOR TÁBOR a seriousfun camp, SOS GYERMEKFALU MAGYARORSZÁG, KÉZENFOGVA ALAPÍTVÁNY, SALVA VITA, ROMANI, speckó

Training

CORVINUS UNIVERSITY of BUDAPEST, European gay & lesbian sport federation, ERSTE Foundation NGO Academy, Liska Tibor Szakkollégium, fakt, Rajk, LOFFICE COWORKID +, SEEDS program, SZ: Széchenyi István Szakkollégium

Skills-based volunteering

Participants of ‚Dare to change!' program

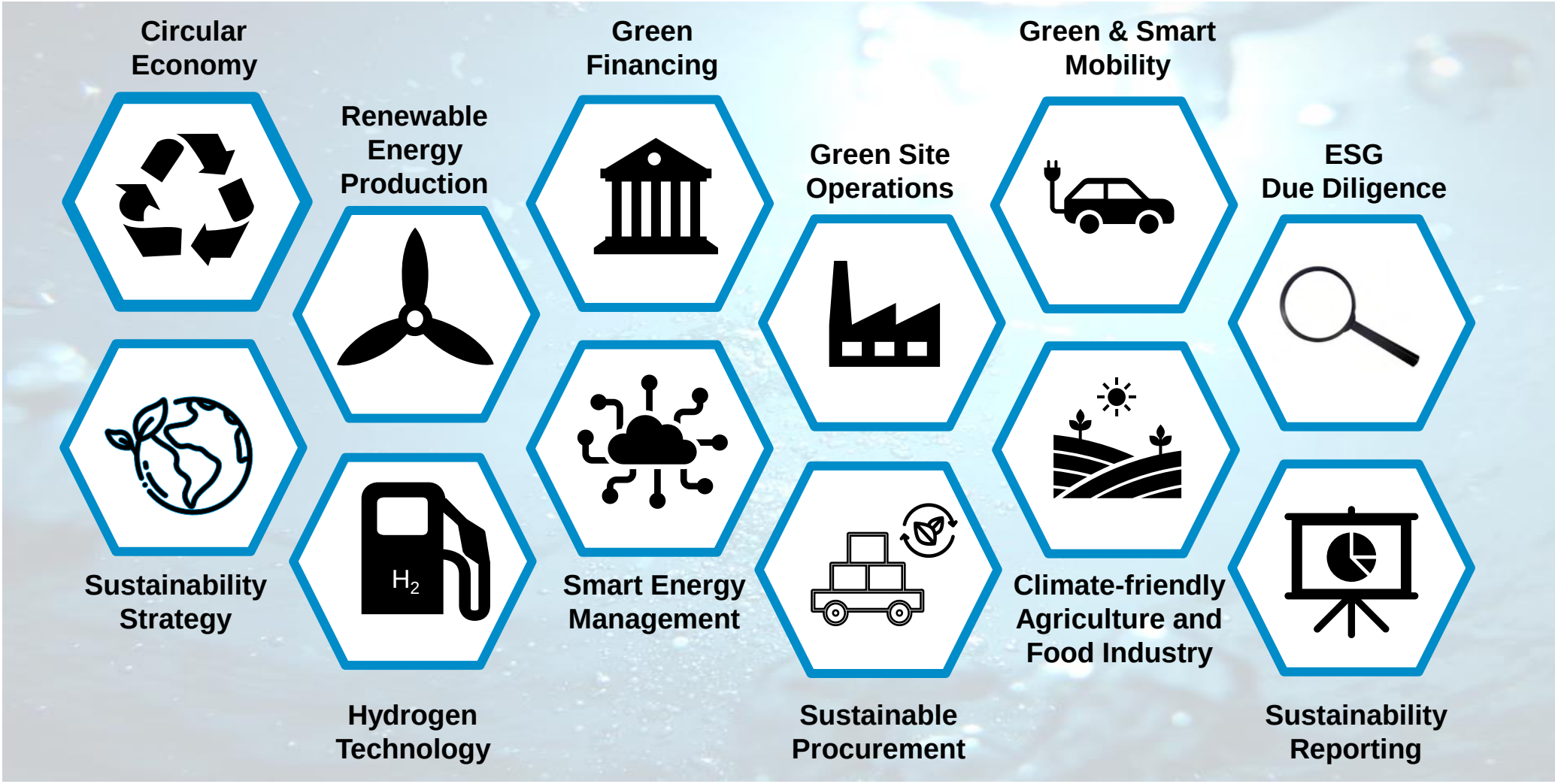
Levegő Munkacsoport, Atlasz Sportegyesület, Vodafone Magyarország Alapítvány, hal at lan

Participants of SEEDS program

Donor organizations

ERSTE Bank, ERSTE Stiftung, European Commission, OPEN SOCIETY FOUNDATIONS, THE VELUX FOUNDATIONS VILLUM FONDEN × VELUX FONDEN

IFUA Horváth addresses several key sustainability issues and so drive green transition – we aim to bring this knowledge in the nonprofit and social entrepreneurial sphere



ERSTE SEEDS programs target social business development via trainings and consulting projects, last year we held a workshop on the present crises

ERSTE SEEDS programs

Client and donor

In collaboration with ERSTE Bank in Hungary and financed by ERSTE Foundation, the SEEDS program was first launched in 2016. We aim to support nonprofit organizations and social enterprises in Hungary, by providing them with trainings, consulting projects and financial support. The core topics are business planning, organizational development and strategy-related projects.

Project

Social business development

Since 2016, we have successfully finished 4 SEEDS programs, where we have worked with dozens of Hungarian and international nonprofit organizations.

Beneficiaries

SEEDS 1

Alföldi Napszél Szociális Szövetkezet
Áramlás Szociális Szövetkezet
Bartos Pál
Bergendóc Szociális Szövetkezet
Bodács Károly
Kabinet Galéria
Mediátor és Társa Nonprofit Kft.
Nagy lépés
Romama Szociális Szövetkezet
Strázsa Tanya Közhasznú Szociális Szövetkezet
Tegyünk Együtt Peréért Szociális Szövetkezet
Wekerlei Társaskör Egyesület

SEEDS 2

SEEDS 3

SEEDS 4

Our SEEDS 5 program is currently ongoing.

Traditional nonprofits as well as social enterprises took part in the energy efficiency training in January

- Chocolate manufacture that employs people living with autism
- Organisation that helps people fighting cancer
- Umbrella organisation that creates an opportunity for disadvantaged members of the society to reinterpret their place (several social enterprises such as café, education, delivery and cleaning services)

All affected in the energy crisis in one way or another

Topics of the energy efficiency traning

Energy market situation, future prospects

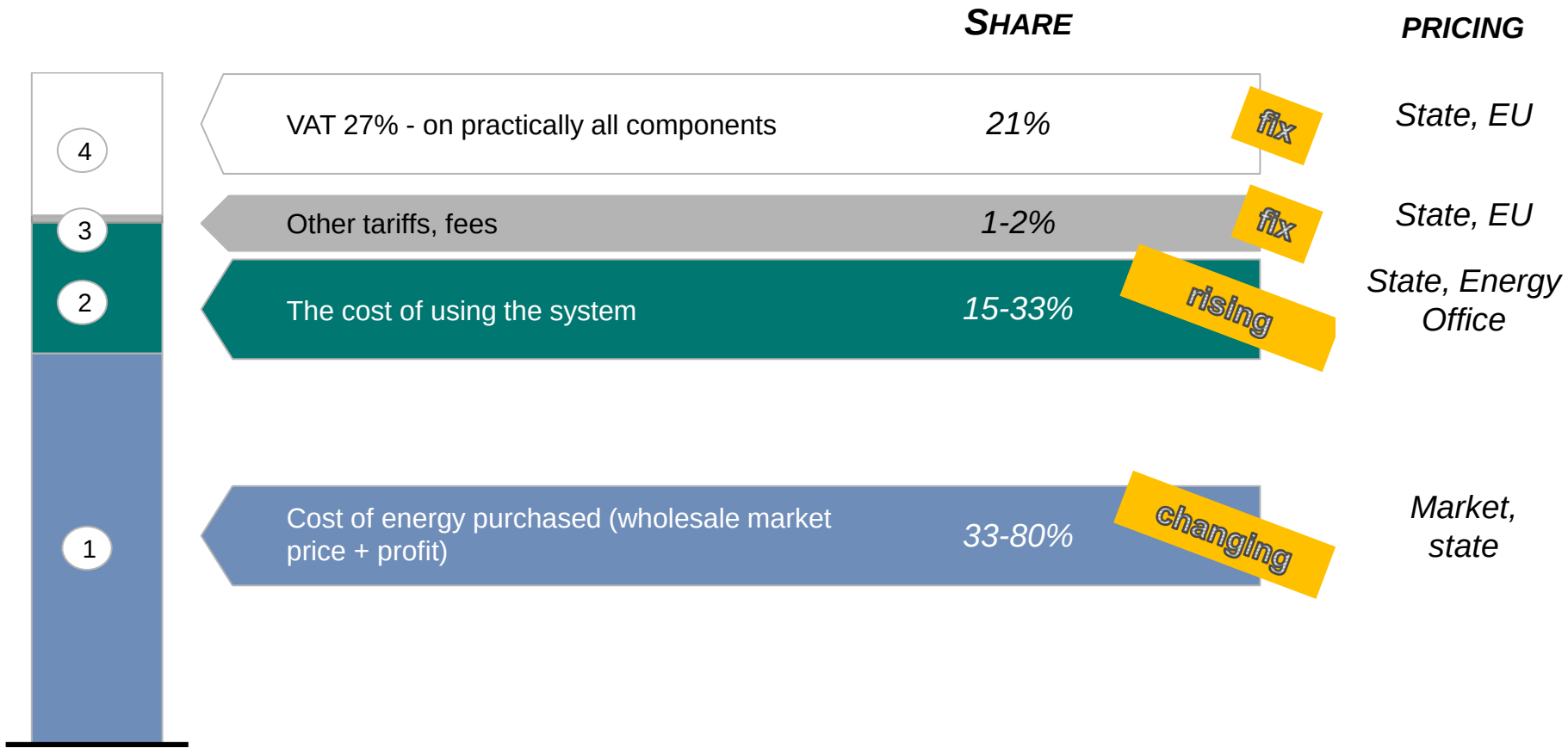
Contracting, billing opportunities

Opportunities to reduce energy consumption without investment

Investment opportunities to increase energy efficiency, calculations of investment economics

Investment financing, grants and other sources of finance

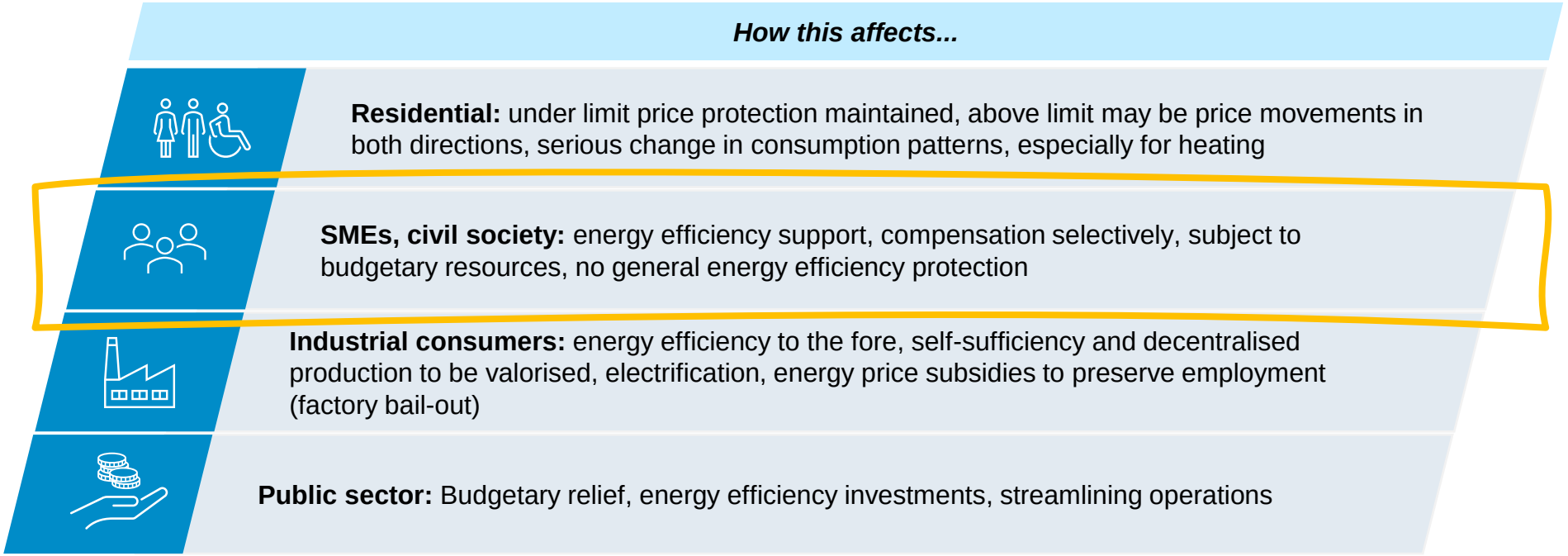
What do we pay in energy prices? Example: electricity



Why have energy prices soared? We see two main reasons: in geopolitics, natural gas is a weapon

Fear of the cold winter	*Weather-induced usage spikes to sudden or sustained highs (this is a serious time bomb), previous winter in the north was cold*
Climate action	*Rise in CO_2 quota prices: important in electricity prices (EU estimate 20%, 80% natural gas)!* *Fit-for-55 (proposal) does not play such a big role* *ESG: not a real cause, Taxonomy not yet sharp, Green finance just getting started*
COVID	*Economic upheaval, we've been on a rollercoaster (2020 negative prices)* *Hectic price movements, deferred energy purchases, short-term energy procurement approach* *Speculation in the energy commodity markets*
NATURAL GAS	Natural gas pushing up electricity prices (as the dominant element of electricity prices in Europe) Technical problems, European production decline (-25%!), colder winter 2020, higher summer 2021 consumption, high Russian domestic demand, low storage load in EU
GEOPOLITICS	LNG (liquefied natural gas): strong demand surge, Asia siphoned off LNG US: shale gas potential has been abundant, not directed to Europe GAZPROM: NorthS2, pressure, Ukrainian war

What are users likely to face? What can they do?



Green transition needs to go hand in hand with cost savings; this is especially true in the nonprofit sector.

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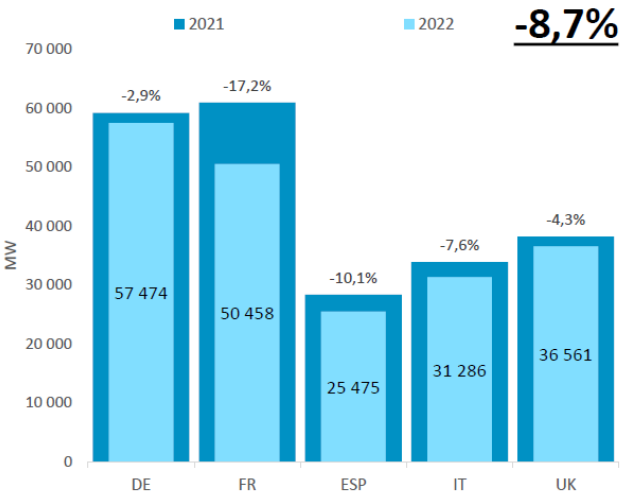
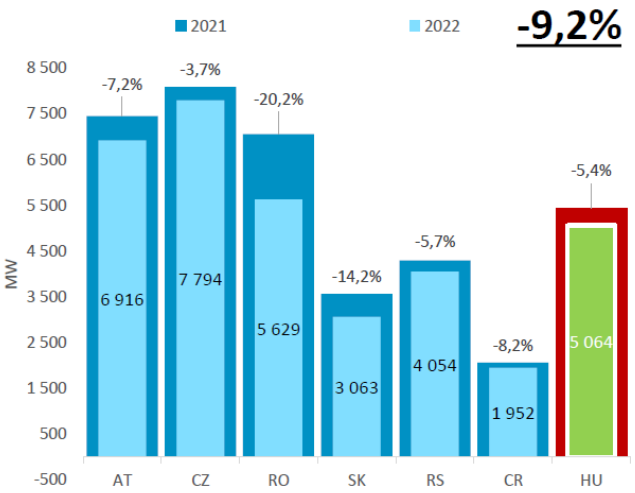
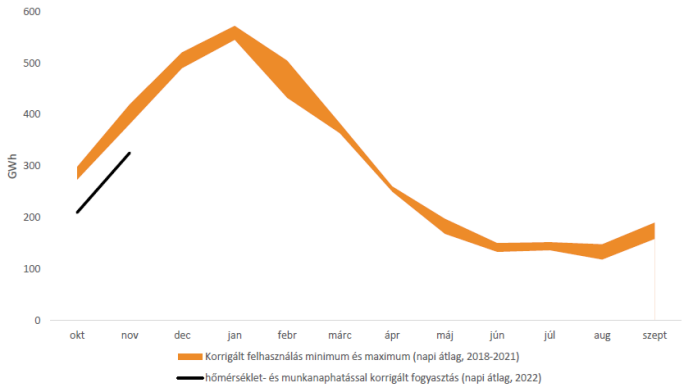
Energy usage has fallen significantly in Hungary as well as in Europe

Five largest markets

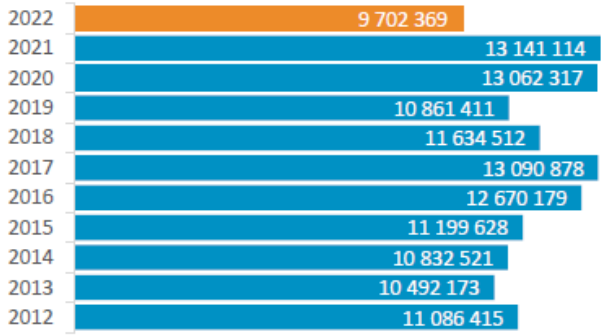


Central Europe





Natural gas monthly consumption in November (MWh)



Electricity

- Aggregate consumption in the five largest **markets has fallen significantly** compared to last year, with an average decrease of 8.7%, of which the French decrease is the largest at 17.2%.
- Consumption in **the Central European region fell even more significantly**, with the domestic market down 5.4%.

Natural gas

- **In November, domestic consumption in Hungary** (9.7 TWh) decreased **by 26%** compared to the previous year.
- **Temperature-adjusted consumption** was 22% lower than a year earlier, due to milder temperatures.

From dressing up to closing off certain rooms, there are various ways to control our consumption

Heat control

Example

 **Warm dressing**	▪ If you are cold, the first thing to do is not to turn up the thermostat and turn up the heat, but to dress more warmly, put on a sweater, vest, thick socks. ▪ Every 1°C reduction in temperature can result in 5% energy savings.
 **Higher humidity**	▪ When humidity is higher, lower temperatures feel warmer. If the humidity is below 40%, it's a good idea to put a little salt water next to the radiator, get houseplants or use an evaporator. However, do not exceed 60% humidity.
 **Leaving the radiator free**	▪ The air heated by the heater causes air to circulate in the room. This can be hindered by a curtain or desk hanging in front of the radiator, making it less effective at heating.
 **Setting the right temperature**	▪ Not all rooms need to be heated to the same level. Do not heat up rooms where you will not be staying for a long period of time (e.g. if you are only making tea or coffee in the kitchen or heating food to be eaten elsewhere, you can turn off the thermostat here).
 **Closure of unused premises**	▪ Different rooms can be combined, so two teams working separately can move into the same office, meaning one less room to heat. If you can do without whole rooms during the heating season, do not heat them. In such cases, it may be worth temporarily insulating the windows and doors (e.g. with bed sponges).

 Source: WWF Hungary, Portfolio

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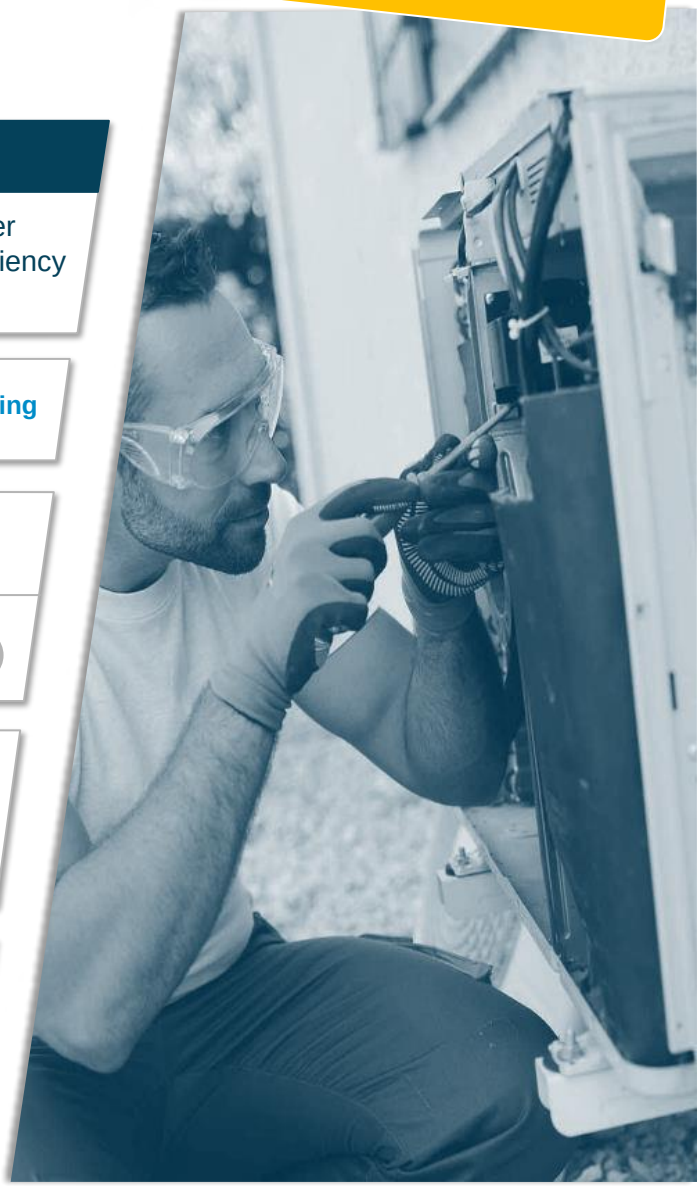
Example



Air conditioning

The split air conditioner consists of two parts: an outdoor unit and an indoor unit. The split air conditioner provides excellent efficiency for heating except on very cold days. In transient and mild periods, its efficiency is far superior to any solution.

Investment claim: 250k HUF per unit + network extension (300-500k HUF)

Savings: 60% / year (including electricity)

Material fee 80% — 20% **Work fee**

Time requirement: 1-2 days

Accredited expert need: ✓ ✗

Comfort: 😐 😑 🙂

Implementation conditions

- ✓ Outdoor units are not always feasible for condominiums
- ✓ Implementation of network extension with H tariff required

Natural gas lock-in

✓ ✗

Summary evaluation

★★☆

One promising means of decoupling from gas, electricity grid expansion needed. In the case of condominiums, implementation may be limited.

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Supported loan for NGOs as part of Erste's Social Banking loan scheme, part of individual financing solutions

Social Banking Loan Features

Target group

- **Social enterprises starting or operating in Hungary**
- The annual turnover of the undertaking **is below EUR 30.000.000 per year**
- **100% of your profit is reinvested in** social enterprise
- It is not subject to bankruptcy, enforcement or liquidation proceedings, nor is it in arrears with its debts to government or financial institutions

Nature of funding

- As part of the **individual financing agreements** with Erste Bank Hungary Social Bank's Development and Management business unit
- for the contractual use of a loan or other form of financing facility of EUR 25,000-500,000 where the **contracting party is a small business or social organisation**
- **No need to insure movable or immovable property**
- Before and during the **loan** period, the Bank provides free **advice**

Source: erstebank.hu

Market financing is also possible through instalments or commercial credit

E.ON Comfort Air Conditioning instalment payment

- **Inverter split air conditioners**: **350-500 thousand Forint investment** (**installation cost included**)
- 30% down payment **6 monthly instalments possible**
- **30-80 sqm indoor space suitable for cooling-heating**
- Energy class A++ / A+
- **H tariff** equipment

Source: eon.hu

Cetelem Online merchandise credit

- **Inverters split air conditioners**: depending on performance and model **150-500 thousand Forint devices**, these do not include the cost of installation (**installation cost not included**)
- The amount of credit available: from HUF 25 000 to HUF 2 000 000
- The **annual percentage rate of charge (APR) is 0%**
- Maturity: **10 months**
- Required **co-payment**, depending on the purchase price: up to HUF 500 000 with no co-payment, from HUF 500 001 min. 20% of the purchase price

Source: klimapont.hu

What we learned and concluded as take-away

- Education is crucial on this field. In order to meet sustainability goals in the future, the nonprofit and social sector cannot be neglegted.
- It is important to make knowledge accessible for nonprofits and social enterprises. Opportunities like today's conference are also a great occasion.
- We paid special attention to have room for questions in four separate blocks, the participants liked it a lot.

Any further questions about the training or other related topics?

Thank you for your attention!

Let us keep connected:

www.nonprofitpartner.hu

www.linkedin.com/company/ifua-nonprofit

www.fb.me/IFUANonprofit

www.youtube.com/IFUANonprofit

IFUA *Nonprofit* PARTNER

CONSULTANCY FOR PUBLIC BENEFIT

We work for social integrity through the development of nonprofit organizations

According to our founders a society is in good condition only if it has more and more people living a dignified and self-supporting life.

Accordingly, **we pay special attention** to support organizations focusing on:

- helping the ones in need to reintegrate them to the society and the labour market;
- addressing housing problems;
- providing training programs.

Sustainable development goals set by United Nations **for which we work**:

Source: https://www.un.org/sustainabledevelopment/sustainable-development-goals/

Some of our professional topics are the same as with profit-oriented businesses, but there are nonprofit-specific topics too

Strategy

- Supported their strategy formulation from market analysis to definition of strategic actions
- Currently mentoring them on one of their strategic goals

Organization, processes

- Supported the articulation of organizational development ambitions and goals
- Helped to kick-off implementation project teams

Business planning and modelling

- Supported the harmonization of two business activities
- Helped to rationalize and monatize business ideas, delivered a financial plan

Controlling

- Developed a management dashboard reporting tool (PowerBI)
- Developed functional reporting tools for Fundraising and Procurement

Project management

- Developed a high-level concept and strategy of a green acceleration program
- Supported the implementation of the 1st and 2nd program cohorts

Fundraising

- Delivered a thorough analysis of the fundraising channels
- Developed a PowerBI dashboard to support financial planning

Social impact management

- Mapped and assessed the social impact with SROI methodology, in 2016 and 2021
- Developed Tableau dashboard for visualization and deep-dive of the results

Social enterprises

- Supported the initial business modelling and planning parallel to market entry
- Supported further service development and scaling concept

Topics covered at the energy efficiency training

Introduction	▪ Introduction to Erste Bank's Social Banking business and IFUA Nonprofit Partner
Energy market situation, future prospects	▪ Why are energy prices high? ▪ What items do we pay for in our energy bill? ▪ What can be expected in the short, medium and longer term?
Questions	▪ Short questions, discussion
Contracting, billing opportunities	▪ Remain in the reduced category ▪ Billing methods and their advantages and disadvantages ▪ Property ownership, renting from an energy bill perspective
Questions	▪ Questions on the first part
Break	
Options to reduce energy consumption	▪ What practices can we use to reduce our energy consumption without investing? ▪ What is sustainable? ▪ What can we do in winter and what in summer?
Investment opportunities to increase energy efficiency	▪ Investment options overview: air conditioning, insulation, replacement of windows and doors, heating modernisation ▪ Recovery options
Investment financing, grants and other sources of finance	▪ What opportunities are there to attract grants and other funding for investments that reduce energy use? ▪ Other sources and Energy Efficiency Obligation Scheme options
Questions, closure	▪ Questions on the second part

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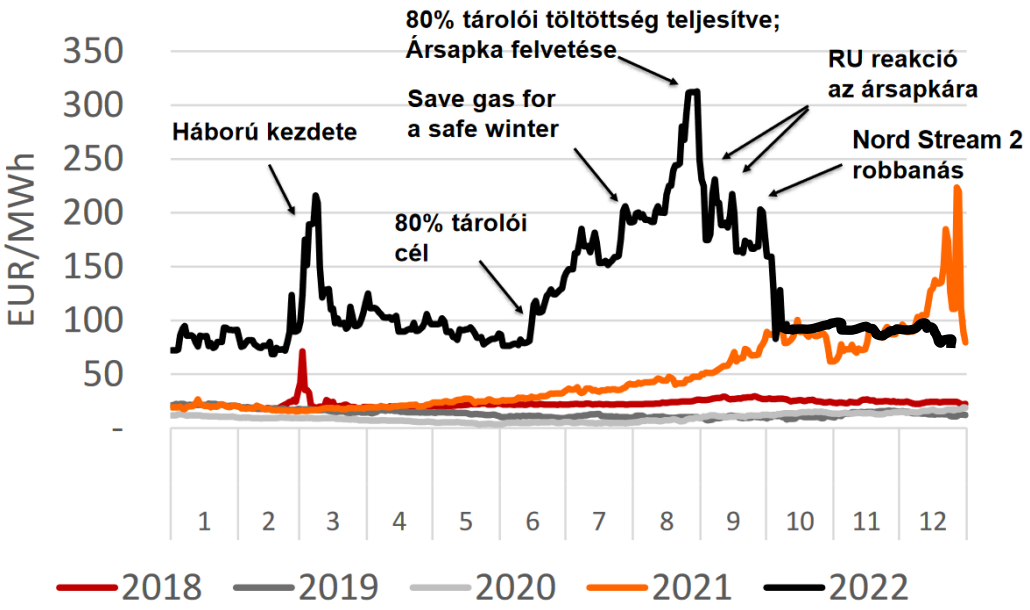
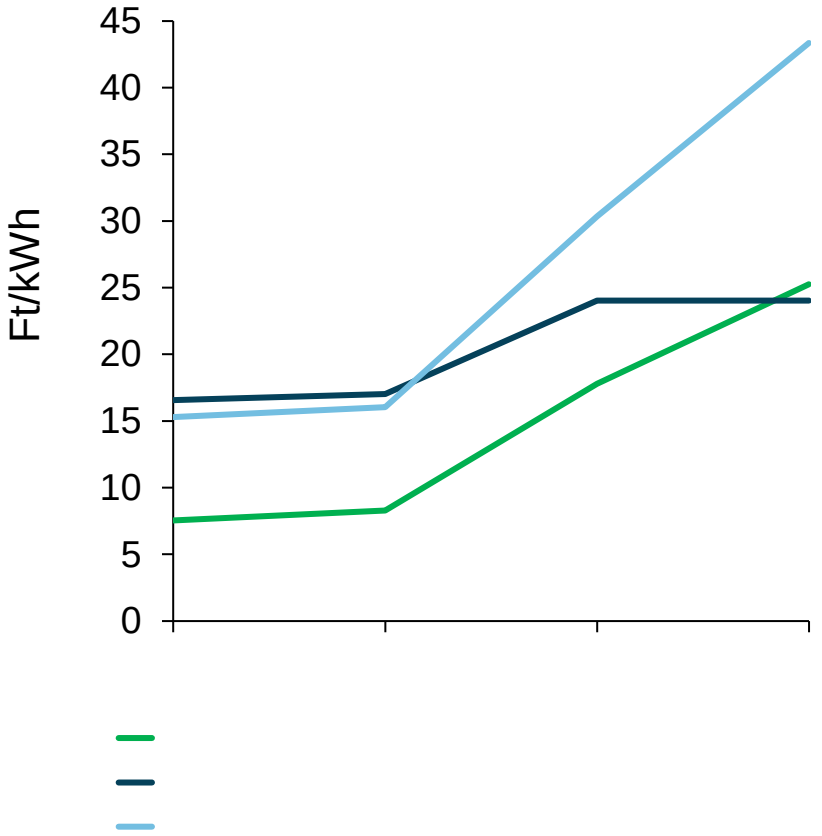
Extreme period: VERY high and very volatile prices since autumn 2021

Wholesale natural gas prices, net



Source: REKK

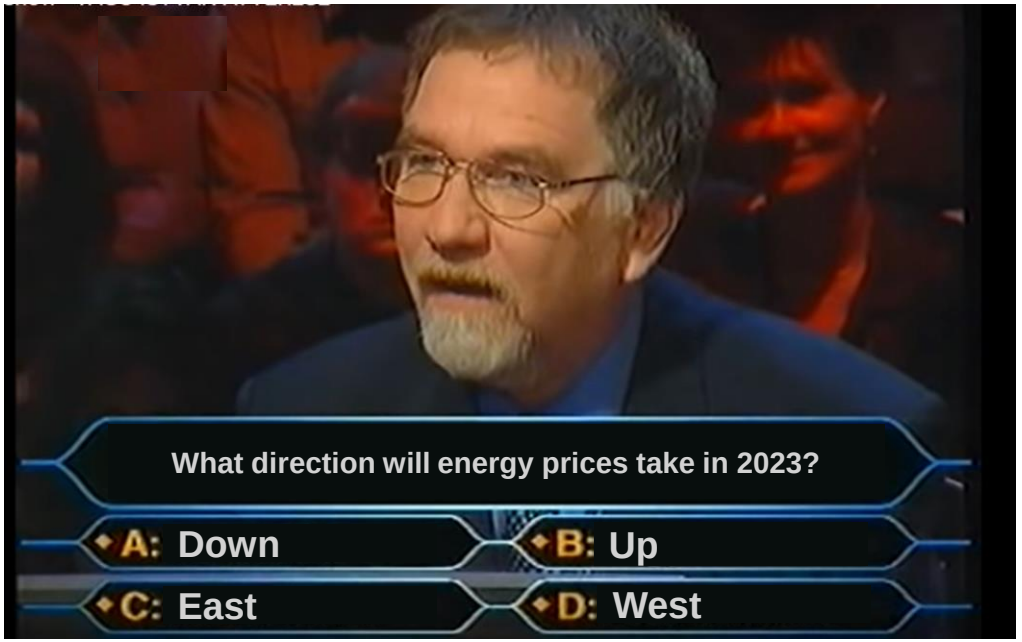
System charges, net



Source: MEKH

High and hectic energy prices in most European countries (10x increase),
In parallel, rising domestic system usage costs (2.5x increase)

The billion dollar question:
Which way will energy prices move in 2023? And after that?



Determining factors

- **Demand trends**: reziliencia, savings
- **Changes in supply:** Global trends, e.g. Chinese economic boom
- **Geopolitics**: conflict resolution (UK-RU, NATO enlargement, sanctions)
- **Weather**: how will the winter be, will there be enough wind?
- **Unplanned outages**: plant availability, operational accidents
- **Construction in progress**: LNG terminal, power plants
- **Regulation**: EU price regulation, domestic energy policy
- **Financial situation**: exchange rate, interest rate

Energy prices are expected to remain high until the end of 2024, and it may be difficult to meet falling demand for another two years.
Energy systems need to be upgraded, and this requires a lot of investment, which will put price pressure on system charges.

THE LOW PRICE ENVIRONMENT THAT WILL LAST UNTIL 2021 WILL NEVER RETURN:((

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The two energy markets differ significantly in many respects

	Universal service	Competitive supply
Mode of operation	Fully regulated by the state	Frameworks regulated
Eligibility	Restricted	Unlimited, free choice
Supply obligation	Entitlement frameworks include	None
Pricing	Guaranteed official fixed price, tariff	Unique price, formula
Contractual relationship	Indefinite	Fixed time frame, extension
Quality of service	Extensively regulated	Agreement-based

1 electricity/gas *~10 units electricity/gas*

Universal service beneficiaries in January 2023

Electricity

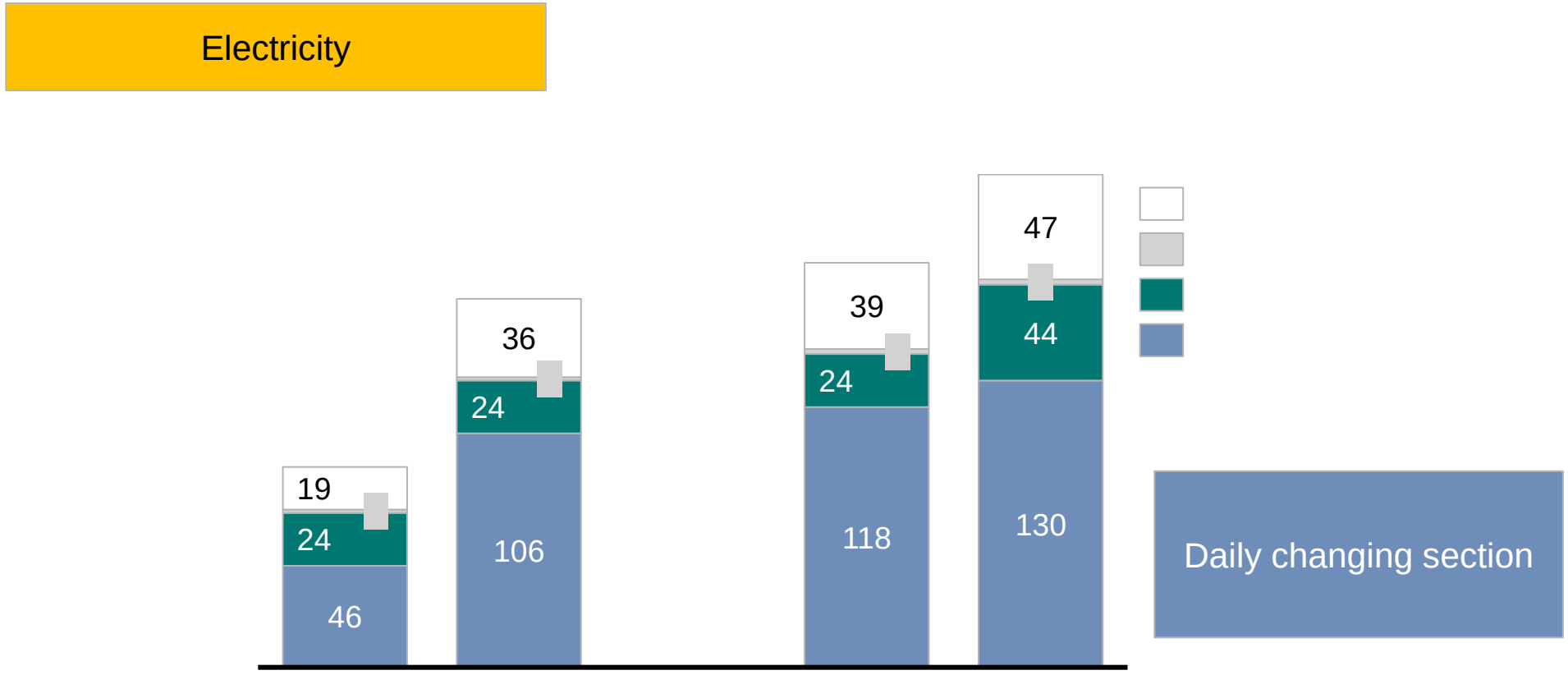
As of August 1, 2022, only non-residential consumers who:

- ***low voltage**, AND*
- *has a combined connection power **3x63 A-not exceeding** for all its applications, AND*
- ***qualifies as a micro-enterprise** * under Act XXXIV of 2004 on small and medium-sized enterprises and on support for their development, AND*
- ***On 18 June 2022,** purchased all or part of its electricity from **the universal service provider**.*

* Within the category of SMEs, a microenterprise is defined as an enterprise which a) has less than 10 employees AND b) has an annual net turnover OR a balance sheet total of less than or equal to HUF 2 million.

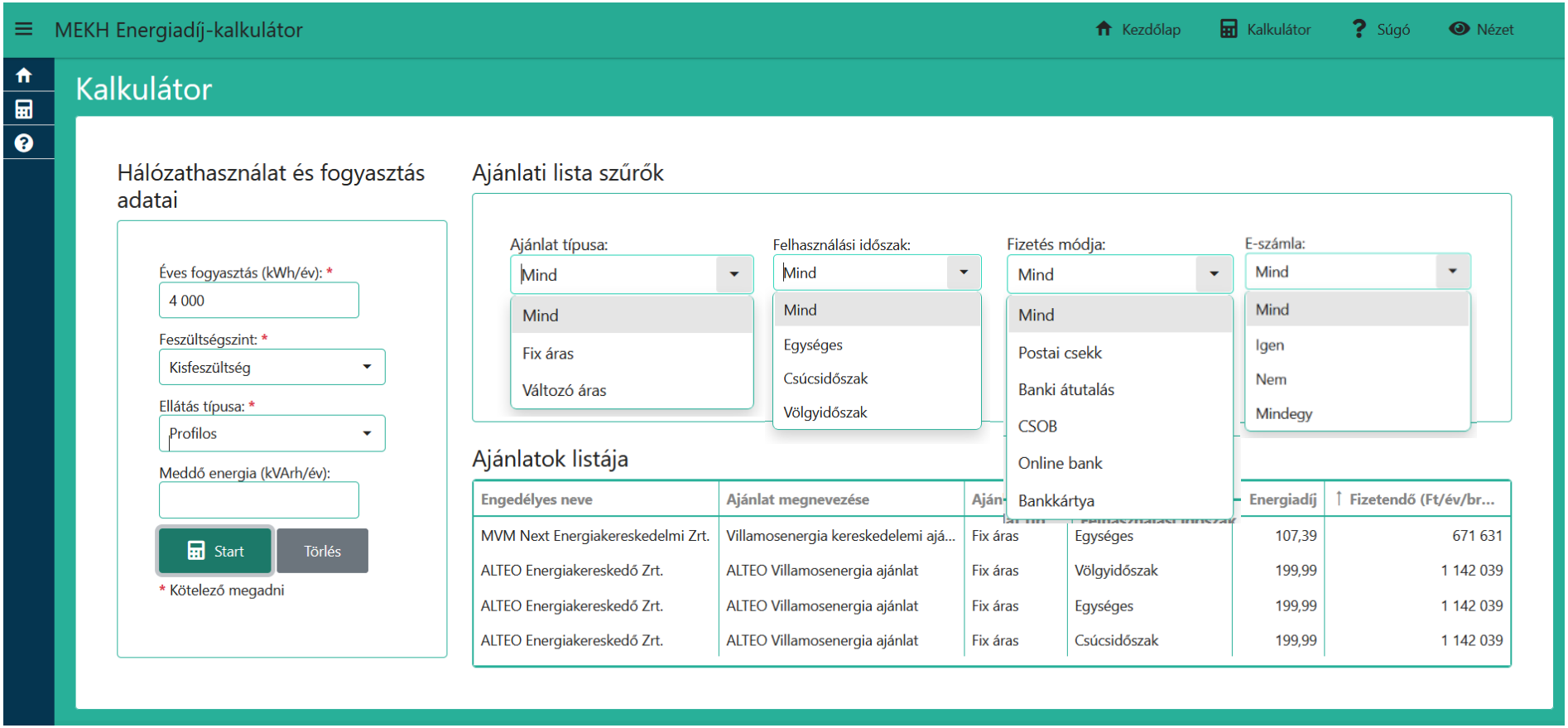
Source: https://www.mvmnext.hu/egyetemesvaltozasok/gyakorikerdesek-aram

Prices in universal service and competitive market (January 2023) for non-household low voltage consumers, HUF/kWh



Source: MEKH, IFUA calculation

An indicative price calculator on MEKH can help you find your way around



https://eka.mekh.hu/calculator
http://www.mekh.hu/download/fix/energiadij_kalkulator_tajekoztato

Universal service beneficiaries in January 2023

Natural gas

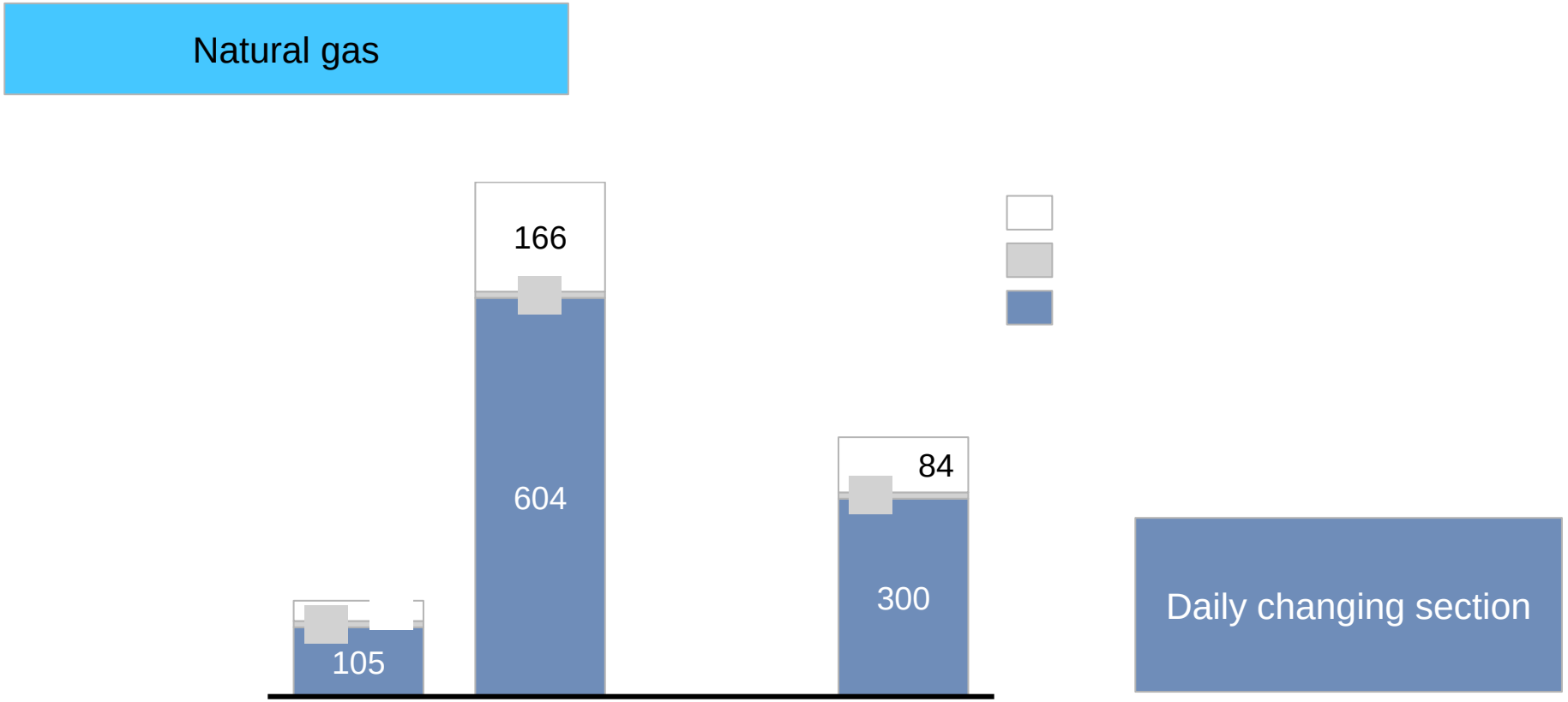
As of August 1, 2022, only non-residential consumers who:

- ***has a purchased capacity not exceeding 20 m3/h** AND*
- ***qualifies as a micro-enterprise** * under Act XXXIV of 2004 on small and medium-sized enterprises and on support for their development, AND*
- ***On 18 June 2022,** purchased all or part of its electricity from a universal service provider.*

* Within the category of SMEs, a microenterprise is defined as an enterprise which a) has less than 10 employees AND b) has an annual net turnover OR a balance sheet total of less than or equal to HUF 2 million.

Source: https://www.mvmnext.hu/egyetemesvaltozasok/gyakorikerdesek-foldgaz

Prices in universal service and competitive market (January 2023) for non-household customers below 20m3/h Ft/m3

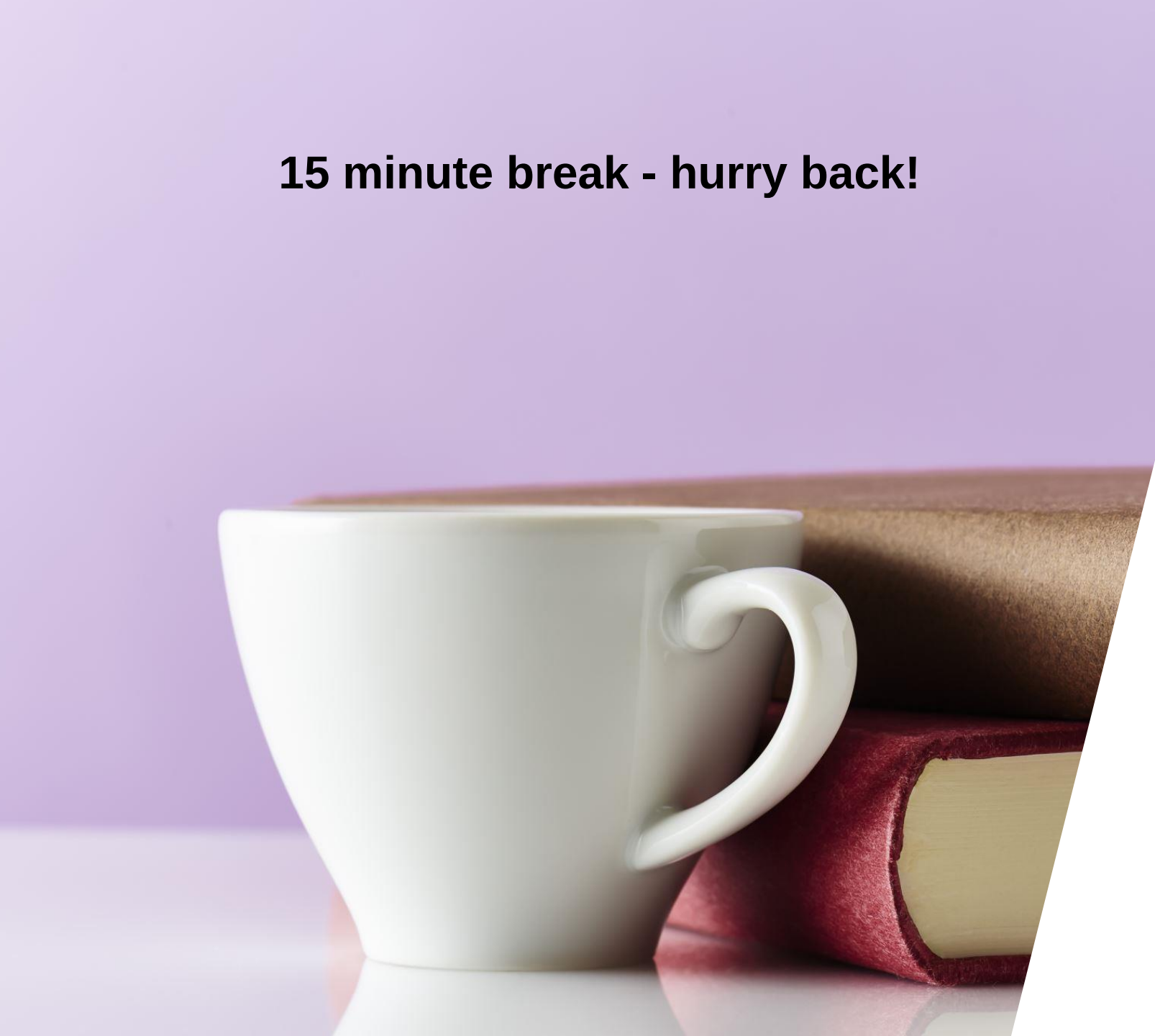


Source: MEKH, IFUA calculation

Key elements of competitive contracts

- *What is our consumption? Can we be partially self-sufficient?*
- *When do we ask for a quote, when does our contract expire?*
- *What was our history (payment, purchase)?*
- *Do we want a fixed price or do we accept a variable price?*
- *How long are we contracted for? 6, 12, 24 months?*
- *How do we pay? Can we make a deposit?*
- *Can we join an energy community, participate in an energy sharing deal?*

15 minute break - hurry back!



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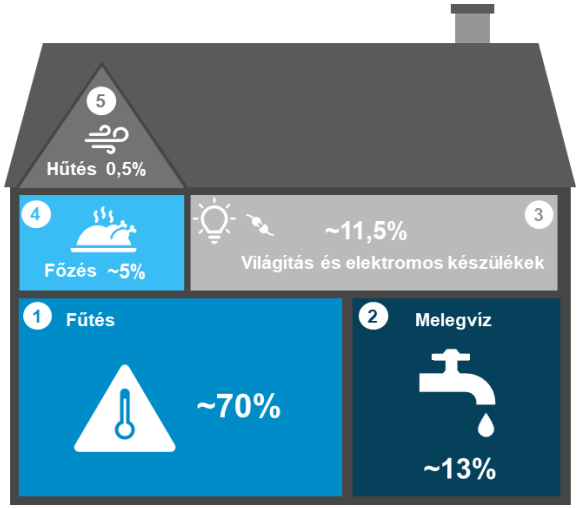
Domestic energy use is dominated by heating and hot water production, with natural gas also used for cooking

Distribution of final energy consumption in households



No data available for NGOs, non-profit organisations

Comments

- 0.5% of the total energy consumption of Hungarian households is used for **cooling**, 5% for **cooking**, 11.5% for **lighting** and various electrical appliances, and 13% for **hot water**.
- Most of the energy , 70% is used **to heat** homes and buildings.
- Heating **is also a significant use of energy** on a national scale, accounting for 20% of total **final energy consumption**.
- Many domestic **non-profit organisations and social enterprises show similarities in their energy use with the general public**, while the more significant differences are also **typically dominated by the share of heating in the energy used**.

In the following, we present tips that can be used to reduce energy consumption without investment, and with the use of which energy savings of up to 5-15% can be achieved on average.

 Source: Hungarian Energy and Public Utility Regulatory Office

It is worth measuring our consumption and paying particular attention to the use of windows and doors

Usage tracking

Measuring consumption	▪ Measure and keep statistics on your consumption so that you are more aware of the level of consumption. By logging our energy consumption, we can be more aware of our consumption and reduce our energy bills by up to 10-15%.

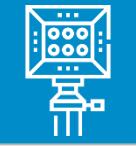
Energy efficient use of windows and doors

Insulation with shutters, curtains	▪ At dusk or when leaving the hall, close the blinds and draw the curtains. Shutters provide significant extra insulation on the windows and doors where heat is most likely to escape from the room. ▪ The use of roller blinds is also recommended in summer because of their thermal insulation effect, which means less cooling is needed.
Short, intensive ventilation	▪ Ventilate briefly, preferably with a cross-hatch. The air will be exchanged, but the room will not cool down. On the other hand, if the window is open, the air can move less, while nearby wall surfaces and furniture cool down, so it is best to avoid this during the heating season.
Reducing the opening hours of doors	▪ Open the doors only for as long as absolutely necessary. If a lockable vestibule is available, it is advisable to keep it closed; if not, a wind curtain can be used to create a wind curtain vestibule.

 Source: WWF Hungary, Portfolio

There are a few small investments that can make a big difference in energy savings

Big energy savings with a small investment

	**Heat reflector behind radiator**	▪ A heat reflector behind the radiators reflects the heat so it does not unnecessarily heat the wall. This is useful if the radiator is located in an external load-bearing wall, as it can save up to 5% energy.
	**Carpet laying**	▪ If the room is not heated by underfloor heating, the floor can be insulated by laying a thick carpet, which also makes the room more comfortable.
	**Thermal camera control**	▪ It is worth hiring a professional with thermal imaging equipment to check the insulation of your windows and doors.
	**Insulation of double glazing**	▪ In the case of sealed windows, there is a solution other than replacement: gaps of 2-5 mm can be closed with adhesive insulation strips, but more effective is groove sealing, whereby a trench is cut in the window and insulation material is inserted into it.

 Source: WWF Hungary, Portfolio

Advice for wood-burning systems

Wood heating

- Avoid burning **wet firewood**. The higher the moisture content of the wood, the lower its calorific value and the more harmful substances are released during combustion.
- The **wood** needs to be dried **for at least one year** to reduce its moisture content below 20%. It dries best when split.
- **Only use untreated wood** for heating, and **hard wood** (beech, oak, acacia, hornbeam). Soft wood has a lower calorific value and damages both the combustion system and the chimney. Treated wood (e.g. varnished wood, furniture board, laminate flooring) is dangerous and illegal.
- If **there are several heating options** to choose from, leaving **solid fuel combustion for rainy days** will allow the smoke and dust generated to be washed out of the air by precipitation, protecting the environment and our own health.

Source: WWF Hungary, Portfolio

Advice for coal-fired systems

Coal firing

- The Hungarian coal resource **is of poor quality**, and peaty lignite is a fuel with high moisture content and low calorific value.
- **Coal combustion releases the most carbon dioxide**, twice as much as wood combustion per unit of energy. Coal is responsible for 40% of all global greenhouse emissions.
- Easier to handle than firewood, it does not need to be split, but **it also damages the combustion equipment** as well as our health.

 Source: WWF Hungary, Portfolio

Advice for gas heating systems

Gas heating

Convector

- There are nearly **3 million convectors** in operation in the country, most of them **obsolete**: low output, high carbon monoxide formation, gas leakage, low efficiency, while those manufactured before 1982 used asbestos sealant, which is a serious carcinogen.
- Since 2018, only convectors that meet strict emission criteria can be installed, and they also have an energy label to help you choose the most efficient device. Their consumption can be up to 25% lower than that of original equipment.

Gas boiler

- In the case of gas boilers, the **heat generator** (boiler) **is separate from the heat dissipation system** (radiator, floor mounted pipes).
- Conventional boilers **are open-burning**, taking air from the living space and discharging the flue gas directly into the chimney. More **modern condensing boilers** can harness the heat in the combustion products, using up to **20% less gas**.

- Regular maintenance of your gas appliances **by an expert** can increase the efficiency of your appliances by up to 20% and reduce your costs.
- The **domestic use of natural gas** has been around 90 billion m^3 in recent years, accounting for 27% of **the country's total greenhouse gas emissions** in recent years.

 Source: WWF Hungary, Portfolio

Advice for electric heating

Electric heating

- Previously **commercially available electrical devices** were limited to heating with electricity (such as infrared panels or oil radiators), but now we can heat entire buildings with electricity, using heat from the environment.
- Electric boilers, radiators and heating panels are 100% efficient, they can produce 1 kWh of heat from 1 kWh of electricity, whereas a heat pump **uses heat from the environment for heating** (e.g. ambient air or ground heat can be extracted), so its efficiency has reached 400-500% for the whole heating season in recent years.
- The installation of heat pump solutions may be relevant mainly for new buildings or deep renovation, but **inverter air conditioners may also be considered for apartments and small offices**.

Source: WWF Hungary, Portfolio

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Room-level heating control

Room-level heating control is most easily provided by thermostatic valves mounted on radiators. For larger investments, we also recommend the installation of smart heating control systems that allow for room-by-room and time-of-day heating programming and remote control.

Investment needs: 60k HUF / room

Savings: 10-12 / year

Material fee 60% 40% **Work fee**

Time requirement: 1 day

Accredited expert claim: ✓ ✗

Comfort:

Implementation conditions

- ✓ difficult to use in single-pipe heating systems
- ✓ learn and apply the rules

Natural gas lock-in

✓ ✗

Summary evaluation

★★★

Simple solution to reduce consumption with low CAPEX

Convector replacement

As of 2018, you can no longer install a convector below energy class B; an A++ rated convector will provide one and a half times better energy efficiency than a B rated one. The new convectors also now have a programmable room thermostat.

Investment needs: 300k HUF / piece

Savings: 20-30% / year

Material fee 80% — 20% **Work fee**

Time requirement: 1 day

Accredited expert claim: ✓ ✗

Comfort:

Implementation conditions

✓ none

Natural gas lock-in

✓ ✗

Summary evaluation

★★☆

Replacing an old outdated and wasteful convector with a new installation means a significant reduction in consumption, one of the solutions for condominiums. Gas disconnection is not supported, but can be a temporary solution.

Replacement of the sash

Plastic windows and doors provide significant thermal and noise insulation against wood. In addition, plastic windows and doors with the same technical parameters and dimensions have a significantly longer lifetime compared to wooden windows and doors. They also improve the feeling of comfort in summer.

Investment needs: 130k HUF / m^2

Savings: 10-18% / year

Material fee 50% 50% **Work fee**

Time requirement: 2-3 days

Accredited expert claim: ✓ ✗

Comfort:

Implementation conditions

- ✓ Construction that can be carried out during the transitional and summer periods
- ✓ Sills and wall repair works also involved

Natural gas lock-in

✓ ✗

Summary evaluation

★★★

Long-term investment, to be assessed together with the future of the property, lead times for window production can be long, often imported goods

Gas boiler replacement (without chimney)*

In the case of a gas boiler, unlike a convector, the heat generator and the heat dissipator are separate, and a heat dissipation system is required in addition to the heat generator (e.g. radiators or underfloor heating). Condensing boilers, which are exclusive from 2016, are efficient in terms of the natural gas used.

Investment needs: 600k HUF (in case of front chimney solution)

Savings: 30% / year

Material fee 70% — 30% **Work fee**

Time requirement: 1-2 days

Accredited expert claim: ✓ ✗

Comfort:

Implementation conditions

- ✓ Existing heating system capacity, significant administration
- ✓ Chimney not required (facade smoke venting and air intake)

Natural gas lock-in

✓ ✗

Summary evaluation

★☆☆

Not supported in the longer term, does not support the switch from natural gas, recommended after insulation

*feasible in the vast majority of buildings

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Our staff have experience of many energy projects and presentations

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