



Empowering Tenants for Energy Reduction: A Win-Win in Digital Transition

Case Study – EN



ENERGY



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Every1 can contribute to the energy transition



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About **EVERY1**

Every1 project sets the goal of delivering an impactful concept that includes all elements needed to enable an effective participation of all European stakeholders in the digital energy market. The project starts with a deep, data-informed understanding of stakeholders and ecosystems to map who they are, what they know, how they use information and where they look for it. Similarly, existing and emerging solutions will be assessed and validated, and use cases will serve to understand what stakeholders need to know in order to take on a role that matches their potential. This gap is used to develop learning pathways that lead to the identification of the needed capacity building material. In parallel, Every1 works on making a market by exchanging best practices with policy makers and energy regulators, enabling discussions on barriers, and developing joint communication material for their peers.

Want to dive deeper into the digital energy transition? Scan the QR code below or visit the EVERY1 project website at <https://every1.energy/> for resources, case studies, and insights on how you can play a role in shaping a clean energy future.



Introduction

A Landlord's Vision for Sustainable Living

In the historic city of Leuven, Belgium, Marc Vermeeren, a landlord with a deep understanding of the smart energy sector, embarked on a remarkable journey to significantly reduce energy consumption in his six-room student house. For over a decade, Marc has meticulously tracked energy usage, combining strategic technical investments with an innovative approach to tenant engagement. This case study explores how Marc fostered a win-win situation, demonstrating that effective communication, coupled with data-driven insights (increasingly facilitated by digital tools), can empower tenants to become active participants in the digital energy transition, leading to substantial savings and a more sustainable living environment for all.

Marc's story is a testament to the idea that every effort, no matter how big or small, has a tangible impact on the energy narrative. His proactive stance not only modernised his property but also cultivated a unique culture of energy awareness among his student tenants, turning a routine landlord-tenant relationship into a collaborative force for energy reduction.



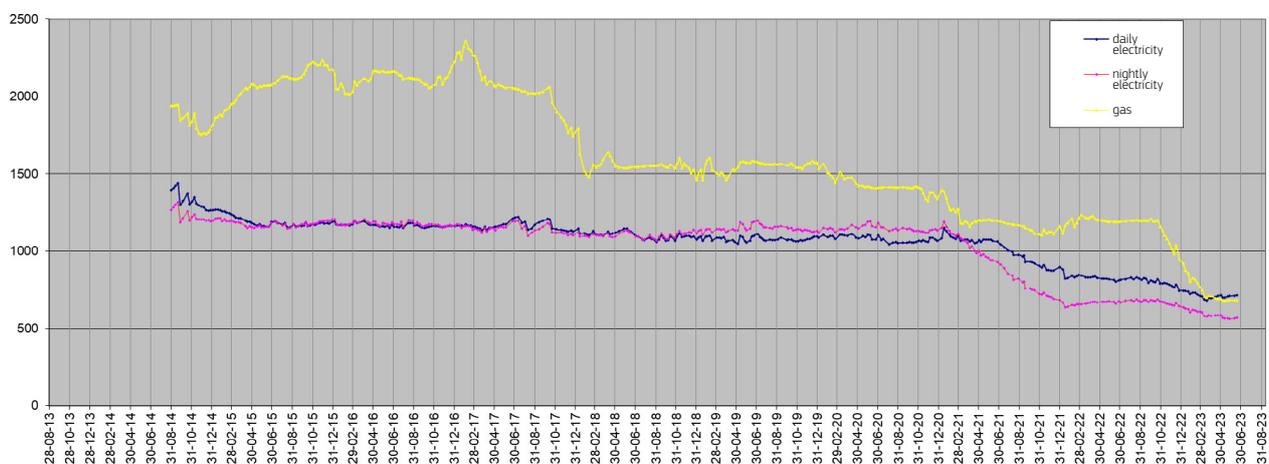
A | The Foundation: Data-Driven Technical Upgrades

Marc Vermeeren's journey began with a commitment to improving the energy performance of his 1950s terraced house. Leveraging his professional knowledge from an organisation supporting the Flemish energy transition, he understood that significant reductions required both structural improvements and behavioural change.

His initial focus was on strategic technical interventions, backed by careful monitoring:

- **Window and Door Replacement (2017):** Marc invested €12,000 to replace most windows and the front door with high-performance glass (U-value of 1.1). This immediately resulted in a **26% reduction in gas consumption**.
- **New Gas Boiler Installation (Early 2021):** A further investment of €6,000 saw the installation of a new condensation gas boiler. This led to another significant drop in consumption: gas fell by an additional **15%**, and remarkably, electricity costs plummeted by an average of **25% (day) to 38% (night)**. Marc attributes the unexpected electricity saving to the boiler's new digital control system, which allowed the circulation pump to be regulated by a room thermostat, eliminating continuous, round-the-clock operation.

Over a 10-year period, these technical changes, combined with other factors, led to impressive overall reductions: the gas meter reading was **67% lower**, daytime electricity **41% lower**, and nighttime electricity **53% lower**. The property's Energy Performance Certificate (EPC) value also significantly improved, from **346 in 2013** to **239 in 2022**, underscoring the long-term value and comfort enhancements. Marc continues to invest, with plans for roof insulation and further window replacements, ensuring the property remains highly energy efficient.



Key Insight: Notice the sharp 26% drop in 2017 following window replacements, demonstrating the immediate impact of structural upgrades.

FIGURE 1: LONG-TERM ENERGY CONSUMPTION (365-DAY MOVING AVERAGE)

B | The Human Element: Engaging Tenants Through the Energy Challenge

While technical upgrades laid a crucial foundation, Marc understood that sustained energy reduction required the active participation of his tenants. The catalyst for a direct engagement initiative was the dramatic surge in energy prices across the European Union in August 2022.

Faced with the prospect of higher energy bills that year, Marc proposed an “energy challenge” to his students during their annual house party in November. The goal was simple yet ambitious: **10% less gas and 10% less electricity** consumption compared to the previous academic year. The students’ enthusiastic response – “Ah, yes, that’s good!” – set the stage for a remarkable behavioural shift.

The challenge, running from September 2022 to September 2023, yielded exceptional results, far exceeding the initial 10% target:

- **Gas consumption decreased by 44%.**
- **Daytime electricity consumption decreased by 16%.**
- **Nighttime electricity consumption decreased by 22%.**

These figures demonstrate the profound impact that collective action and a clear, shared goal can have on energy consumption.

C | The Digital Link: From Manual Readings to Smart Insights

A critical factor in the success of Marc's energy reduction efforts, particularly the student challenge, was the consistent use of data and its visualisation. For 11 years, Marc manually collected weekly meter readings for gas, day and night electricity, and water – approximately 50 data points per year. This dedication provided him with a rich database of historical consumption patterns.

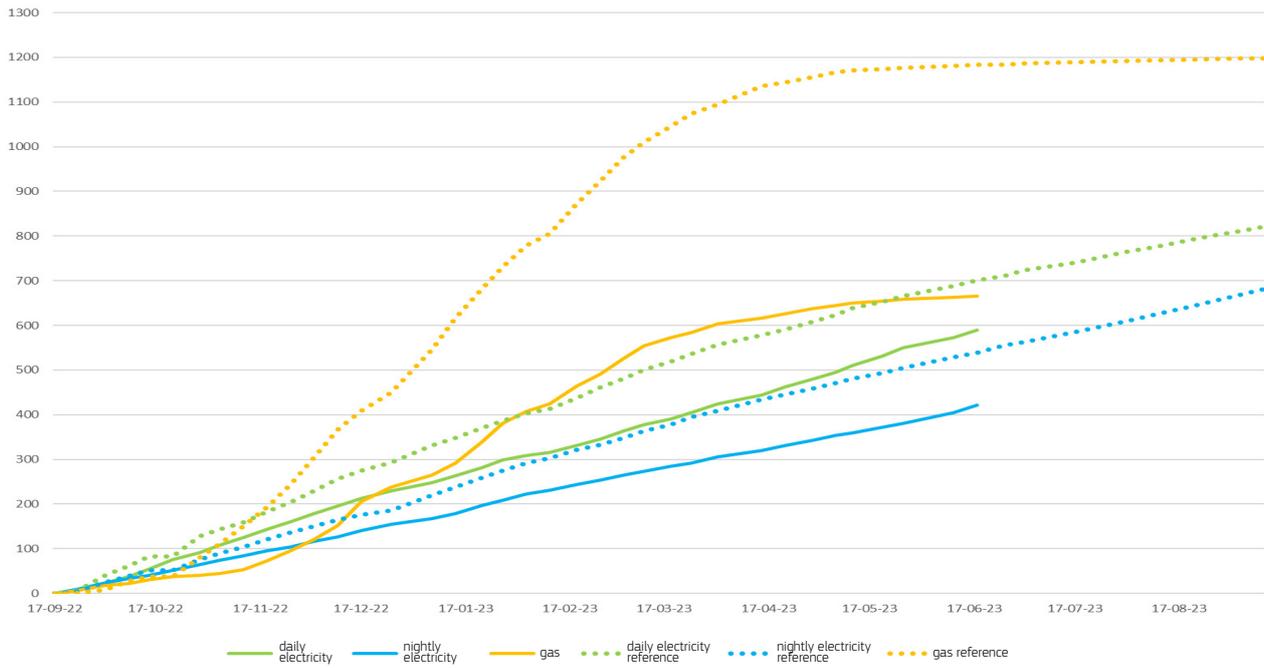
During the energy challenge, Marc leveraged this data by providing **weekly updates on a bulletin board in the kitchen**. This simple, yet highly effective, digital-age communication tool allowed students to see their current consumption plotted against the previous year's reference lines.

“

Marc notes

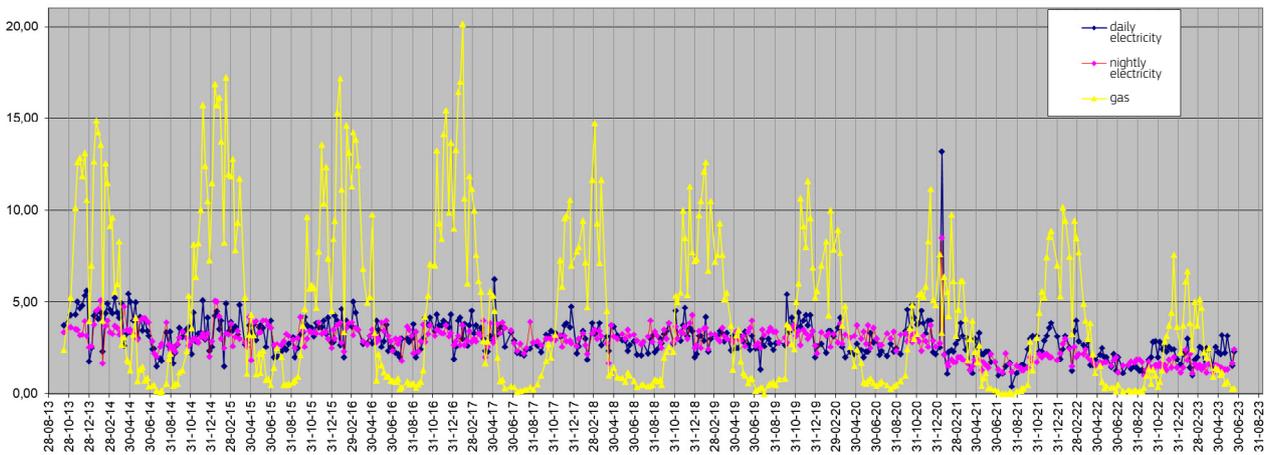
They see the consumption from last year compared to this year's actual consumption. This makes the changes in their behaviour very tangible. In other words, they already see the following week what they achieved the week before. That's a real boost for them. The chart is being discussed enthusiastically in the kitchen.

”



Key Insight: The gap between the reference line (last year) and actual consumption (this year) represents the 44% gas reduction achieved through student behavioural shifts.

FIGURE 2: ENERGY CHALLENGE: CUMULATIVE CONSUMPTION VS. REFERENCE



Key Insight: This graph tracks the 'heartbeat' of the house's energy use over several years. Notice how the peaks for gas and electricity have consistently flattened over time, illustrating that the combination of structural upgrades and resident awareness has permanently lowered the building's energy baseline.

FIGURE 3: WEEKLY ENERGY CONSUMPTION TRENDS

While Marc's initial data collection was manual, the principle of using frequent, transparent data feedback to drive behavioural change is central to the digital energy transition. The recent installation of **smart meters** for gas, electricity, and water at the student house will further digitalise this process, enabling automated data collection via a distribution system operator portal. This will provide even more granular, real-time insights, potentially allowing for more dynamic challenges and personalised feedback in the future, fully embedding the house's energy management within the digital energy ecosystem.

D | A Win-Win Outcome: Benefits for Landlord and Tenants

Marc Vermeeren's approach created a clear win-win situation for both himself as the landlord and his student tenants:

- **For the Landlord (Marc):**
 - **Significant Cost Reduction:** The combined technical upgrades and behavioural changes led to substantial reductions in energy bills, directly impacting his operational costs.
 - **Increased Property Value:** Ongoing investments in insulation and modern infrastructure significantly increased the property's value and improved its EPC rating, making it more attractive and future-proof.
 - **Enhanced Tenant Relationships:** The collaborative approach fostered a positive relationship with his tenants, turning a potential conflict over rising energy costs into a shared success story.
 - **Contribution to Sustainability:** As a professional in the smart energy sector, Marc is actively contributing to the Flemish energy transition on a micro-level, aligning his personal actions with broader sustainability goals.
- **For the Tenants (Students):**
 - **Lower Energy Bills:** The direct financial benefit of reduced consumption meant students often paid less than their advance payments, or even received a refund, providing a tangible incentive for their efforts.
 - **Improved Comfort and Quality of Life:** Technical upgrades like new windows and boilers led to a more comfortable and warmer living environment.
 - **Increased Energy Awareness:** The weekly updates and challenge fostered a heightened awareness of their energy consumption habits, equipping them with valuable knowledge for future sustainable living.
 - **Empowerment and Teamwork:** The challenge transformed energy saving into a collective goal, fostering a sense of responsibility and teamwork among the students.

This case study exemplifies how proactive management and effective communication, underpinned by data, can transform energy consumption into a shared objective with mutual benefits, perfectly embodying the spirit of the digital energy transition.

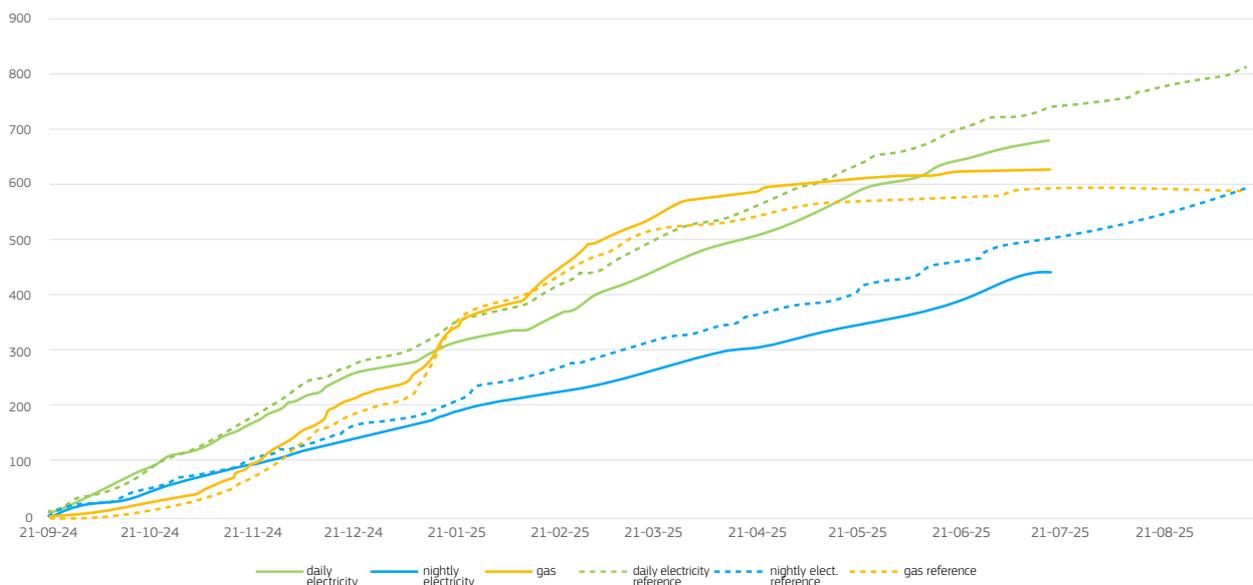
Financial Support & Subsidies

To replicate Marc's technical upgrades, landlords should investigate local and national subsidy schemes (e.g., Renovation Grants or Energy Efficiency Premiums). These can significantly offset the €18,000 investment costs shown in this study. Availability and levels of funding vary significantly depending on your EU country. We recommend visiting the official portal of your national energy agency or the EU's ['Energy Efficiency First'](#) resources to identify specific grants available in your region for window replacement, boiler upgrades, and smart-metering integration.

E | Lessons Learned: Communication, Data, and Collaboration

Marc Vermeeren's experience offers valuable insights for other homeowners, landlords, and even energy communities looking to drive energy reduction through digital and behavioural means:

- **Communication is Key:** Marc's success hinges on his ability to involve tenants in the energy story, making them feel jointly responsible. Organising informal meetings, clearly outlining expectations, and maintaining a good relationship are crucial.
- **Make Progress Visual and Tangible:** Weekly updates of meter readings, displayed prominently (e.g., on a bulletin board or via a WhatsApp group), make abstract energy consumption concrete. Seeing real-time progress provides immediate positive reinforcement and fuels motivation. This is where digital tools, like smart meters and energy monitoring apps, can truly excel, providing automated, granular feedback.
- **Start Small, Build Success:** Beginning with achievable goals (like the 10% challenge) creates early success experiences that motivate further effort. Once initial targets are met, more challenging but still realistic goals can be introduced.
- **Combine Technical and Behavioural Approaches:** While behavioural changes can yield significant results, they are amplified when combined with strategic technical investments. Modern insulation, efficient appliances, and smart heating systems provide the foundation for tenants' efforts to be truly impactful.
- **Foster a Shared Benefit:** Clearly linking energy reduction efforts to tangible benefits for tenants (e.g., lower bills, potential rewards) creates a strong incentive and transforms a chore into a shared objective.



Key Insight: This current snapshot shows that the 'Energy Challenge' was not just a one-off event. By comparing this year to last year's successful reference, you can see that the students have successfully maintained their lower consumption habits, proving that behavioural change can lead to long-term sustainability.

FIGURE 4: RECENT ENERGY CONSUMPTION (2024-2025 VS. 2023-2024 REFERENCE)

In conclusion, Marc Vermeeren's student house in Leuven serves as an inspiring micro-example of the digital energy transition in action. By embracing data, fostering open communication, and empowering his tenants, he created a model where both landlord and residents thrive, proving that a sustainable future is a collaborative effort, driven by smart choices and shared insights.

Replication Checklist for Landlords

- 1.** Conduct an initial energy audit (e.g., check roof insulation and U-values of windows).
- 2.** Install smart meters to automate data collection.
- 3.** Propose a transparent profit-sharing model for energy savings.

Replication Checklist for Tenants

- 1.** Request a weekly visualisation of energy data.
- 2.** Set a collective goal (e.g., the 10% challenge) to foster teamwork.
- 3.** Establish a dedicated communication channel.

Glossary

Digital Energy Transition

The transformation of the energy sector towards a more sustainable, efficient, and secure system, driven by the integration and application of digital technologies.

Energy Performance Certificate (EPC)

A certificate that indicates the energy efficiency of a building, rated from A (most efficient) to G (least efficient).

Smart Meters

Electronic devices that record consumption of electric energy or gas in intervals and communicate that information back to the utility for monitoring and billing, providing granular data to users.

U-value

A measure of heat transfer through a material or structure; a lower U-value indicates better insulation and less heat loss.

Acknowledgements

This case study was developed using information provided by Marc Vermeeren, a landlord in Leuven, Belgium, detailing his experiences and data from his student house.



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