



PI System to empower Smart Meter Reading

Presented by **Geneviève Fritchley**, IT Project Manager at **Groupe E**

Agenda

- About Groupe E
- Smart Metering pilot project
- The challenges (technical, business, IT)
- Solution
- Demo e-vision portal
- Summary and conclusion

About Groupe E

Nr 1 electricity supplier in the French part of Switzerland

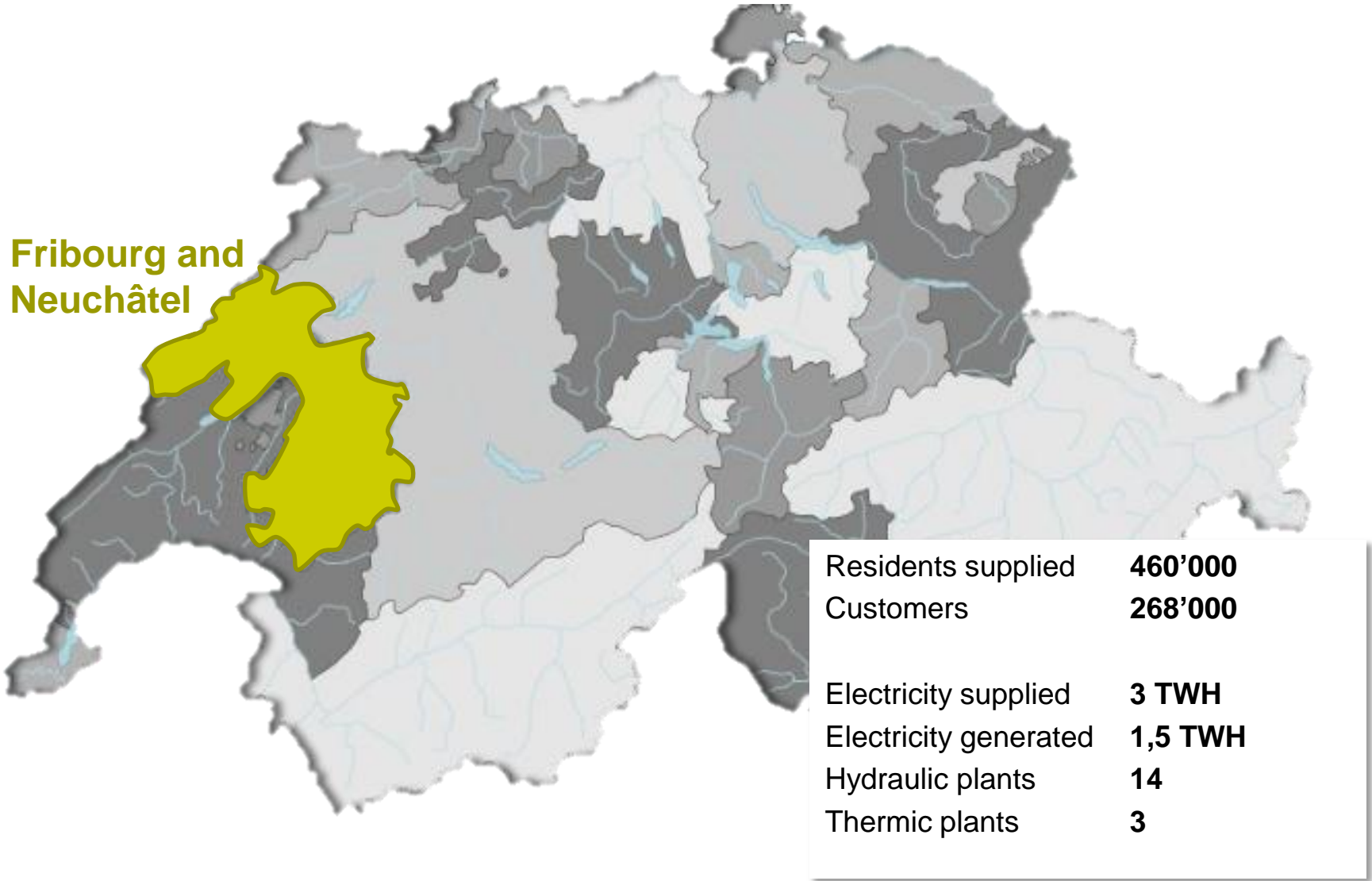


Headquarters in Fribourg

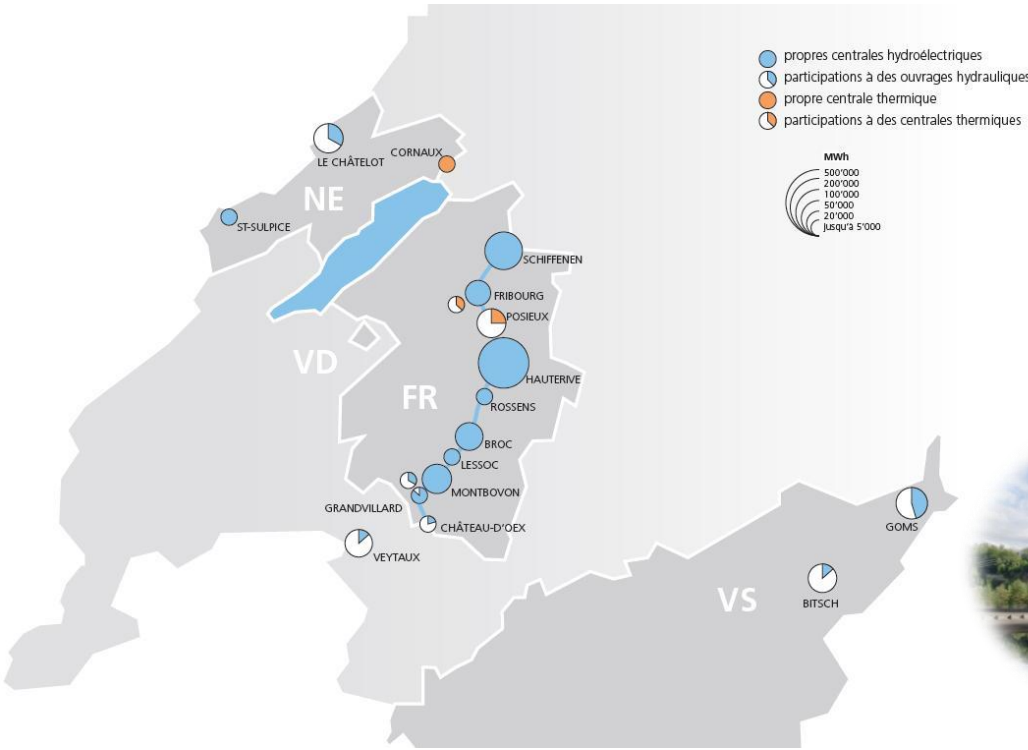
Workforce

Groupe E SA Generation, distribution, engineering	588
Groupe E Connect SA Electric installations	469
Groupe E Entretec SA Thermic installations maintenance, water treatment	34
Groupe E Electroménager SA Electrical appliances stores	69
Groupe E Greenwatt SA Renewable energy	8
Total	1168 Employees 142 Apprentices

Electricity distribution area



Electricity generation



Rossens



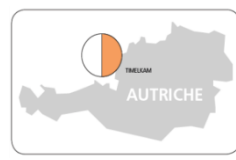
Schiffenen



St-Léonard



Timelkam



Cornaux



What is a smart meter ?



A **smart meter** is an electronic equipment measuring your energy consumption (electricity, gas or water) and enabling a two-way communication with a central system called AMI (Advanced Meter Infrastructure).

Some features (depending on vendors) :

- Automatic remote meter reading for invoicing purposes
- Dynamic tariffs
- Remote Load balancing of household appliances for the grid operator
- Remote connection / disconnection of customers
- Give information to residential customers about their consumption (home display, web access) and motivate them to save energy
- Key element to the smart grid

Smart Metering Pilot project

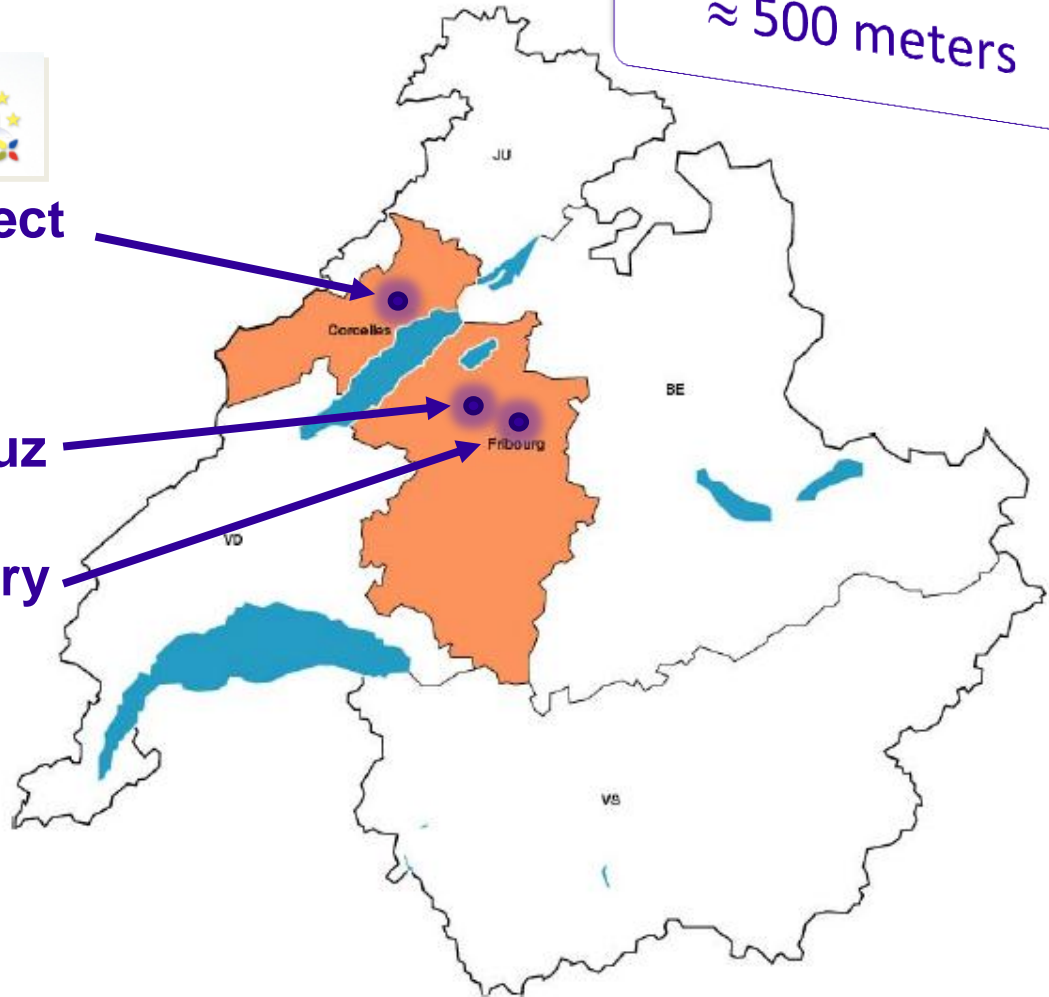


Cernier : SOLUTION project

Pilot zone
FTTH

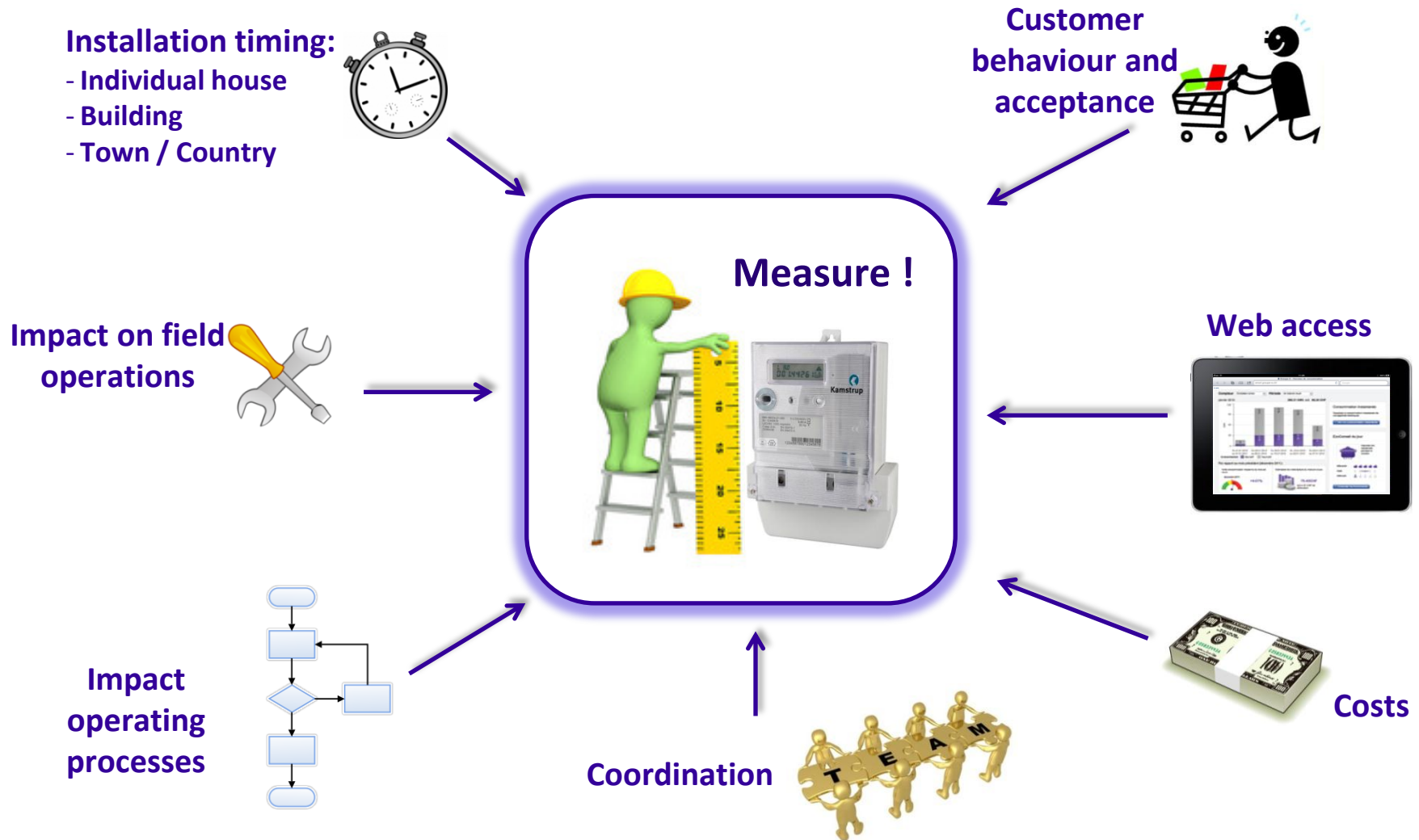
Fribourg Torry

Neyruz

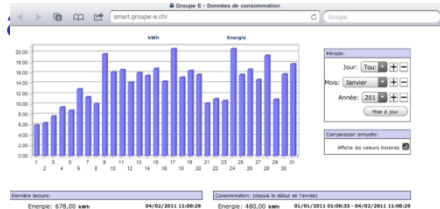
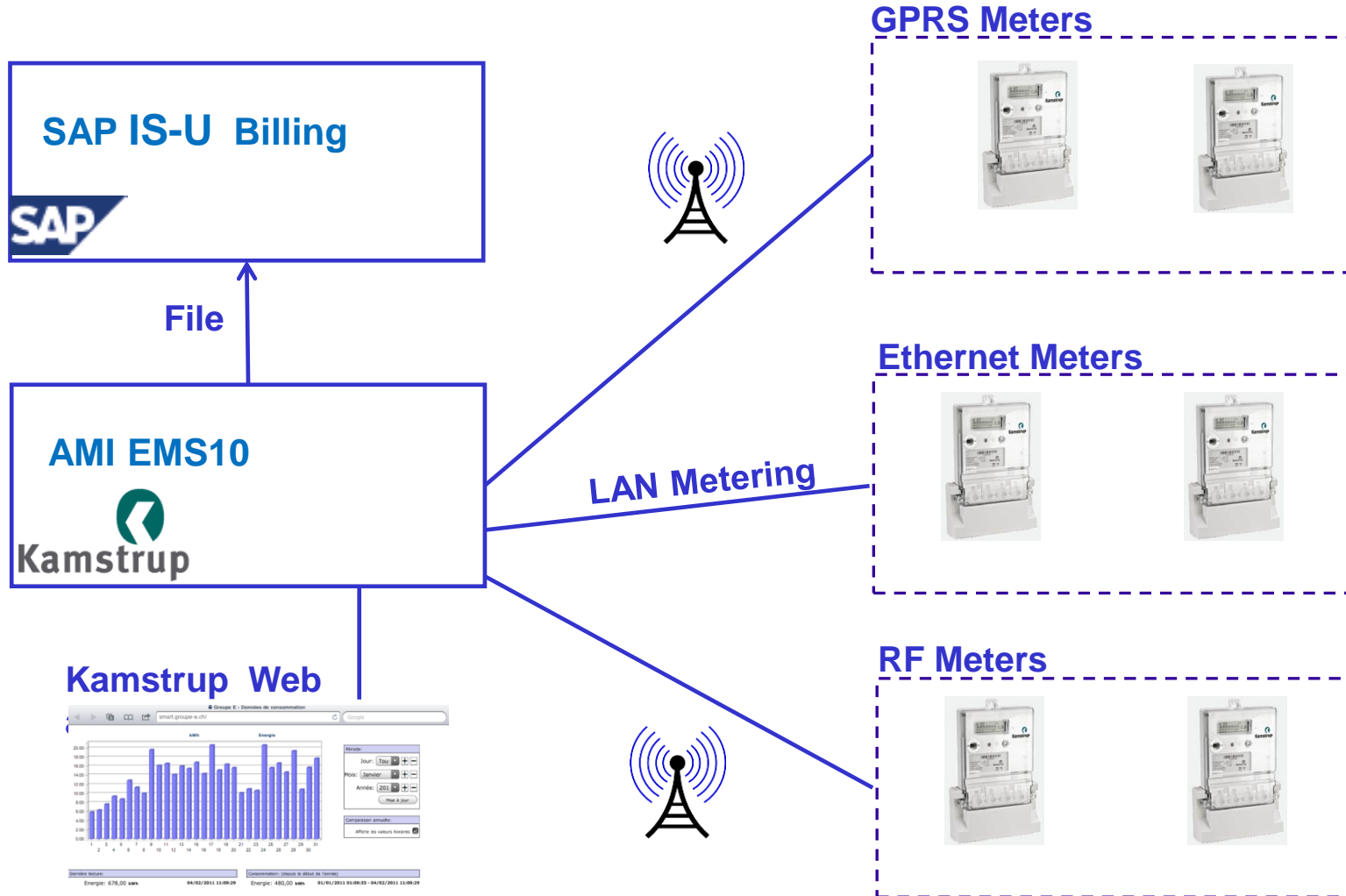


≈ 500 meters

Smart Metering pilot project goals



The metering technical challenge



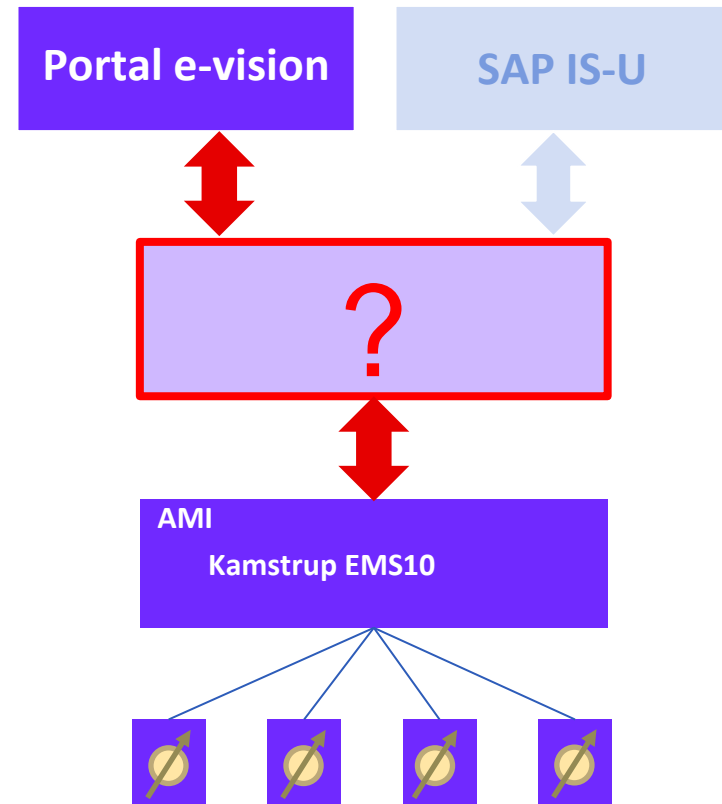
The business challenge

Help our customers to save energy

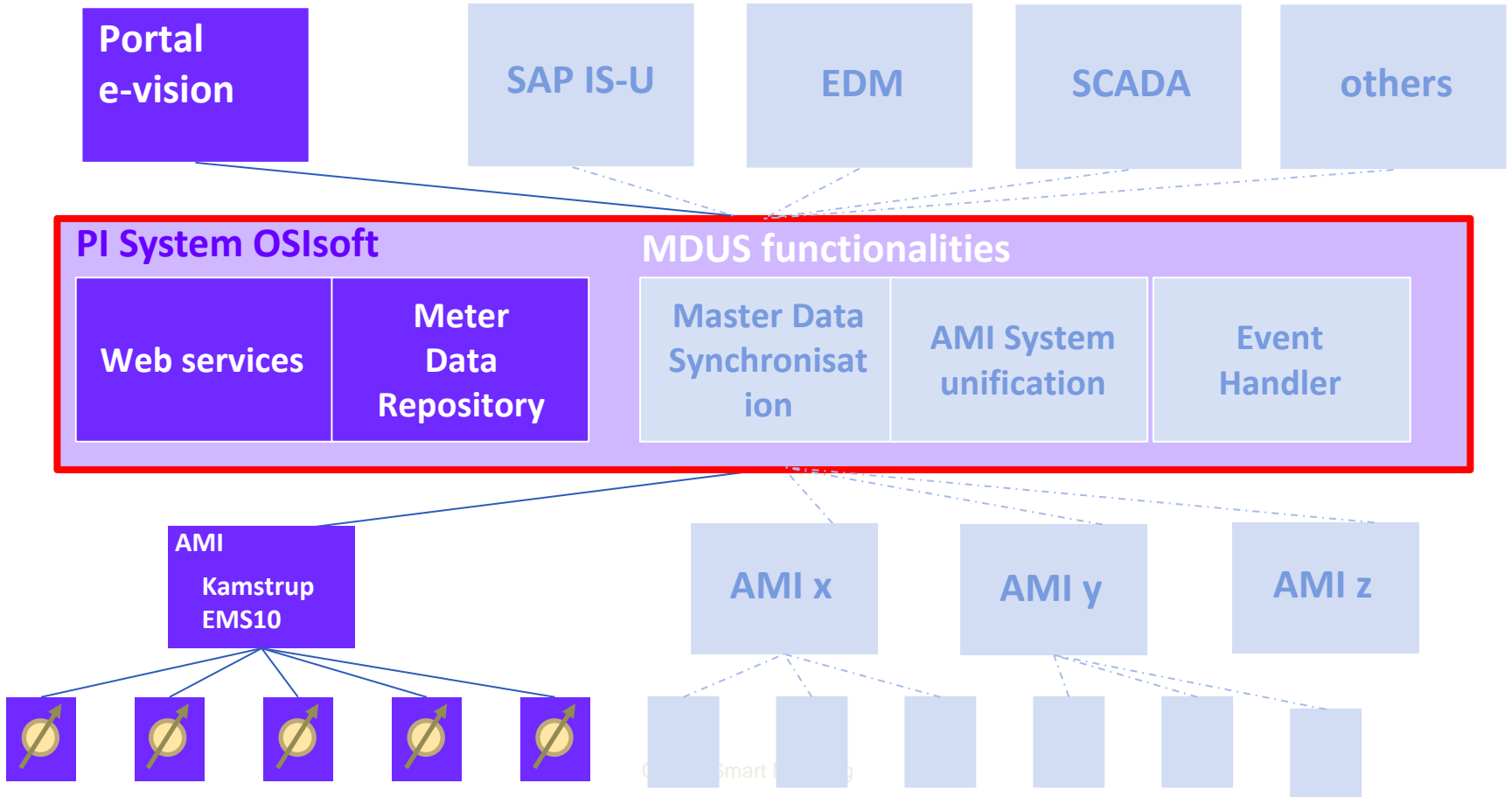
- Develop a user-friendly portal to visualise
 - Their instantaneous electricity consumption in real time
 - Their past consumption
 - To compare their electricity consumption with others
- Give energy saving tips
- Validate whether such a portal is useful to customers in case of a Smart Metering rollout

The IT architecture challenge

- Connect the Kamstrup AMI infrastructure to the portal for the pilot project
- Define the IT architecture for later Smart Metering rollout

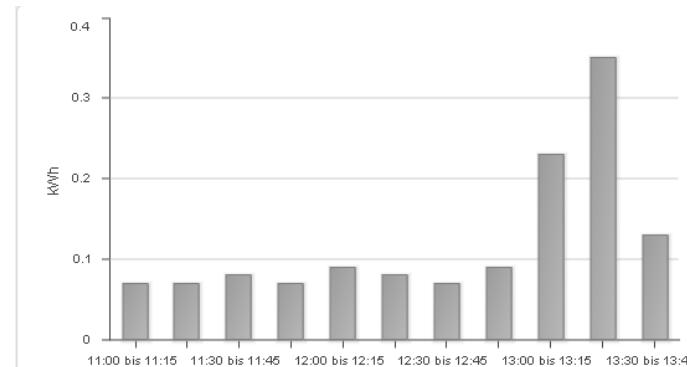


IT Architecture solution



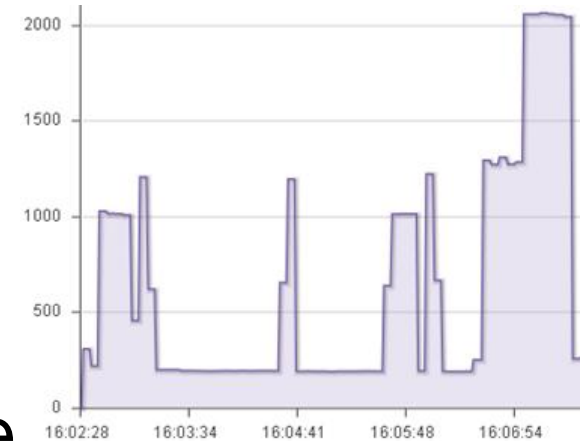
Load profile of the latest ¼ hour

- Each load profile represents one meter reading every ¼ h = 96 values per day
- Most AMI systems interfaces supply one load profile per day with 96 values
- Requirement : historical load profile of the latest ¼ hour available on the portal
- Kamstrup developed a specific interface sending 2 files per meter every ¼ hour to the PI System
- The UFL (Universal File Loader) is used on the PI System side
- A new interface should be developed in case of a rollout
- The load profiles are stored in the PI Server



Real time issue

- Essential functionality with real added value for customers
- Would mean a conceptual change for Kamstrup software

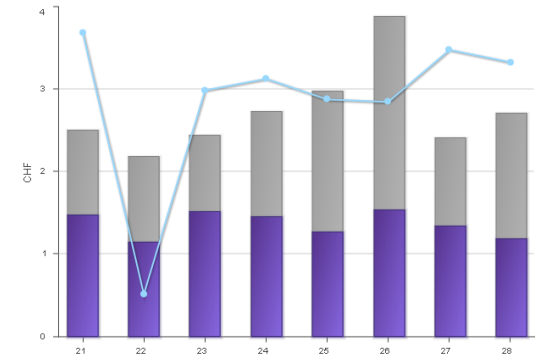


→ Solution

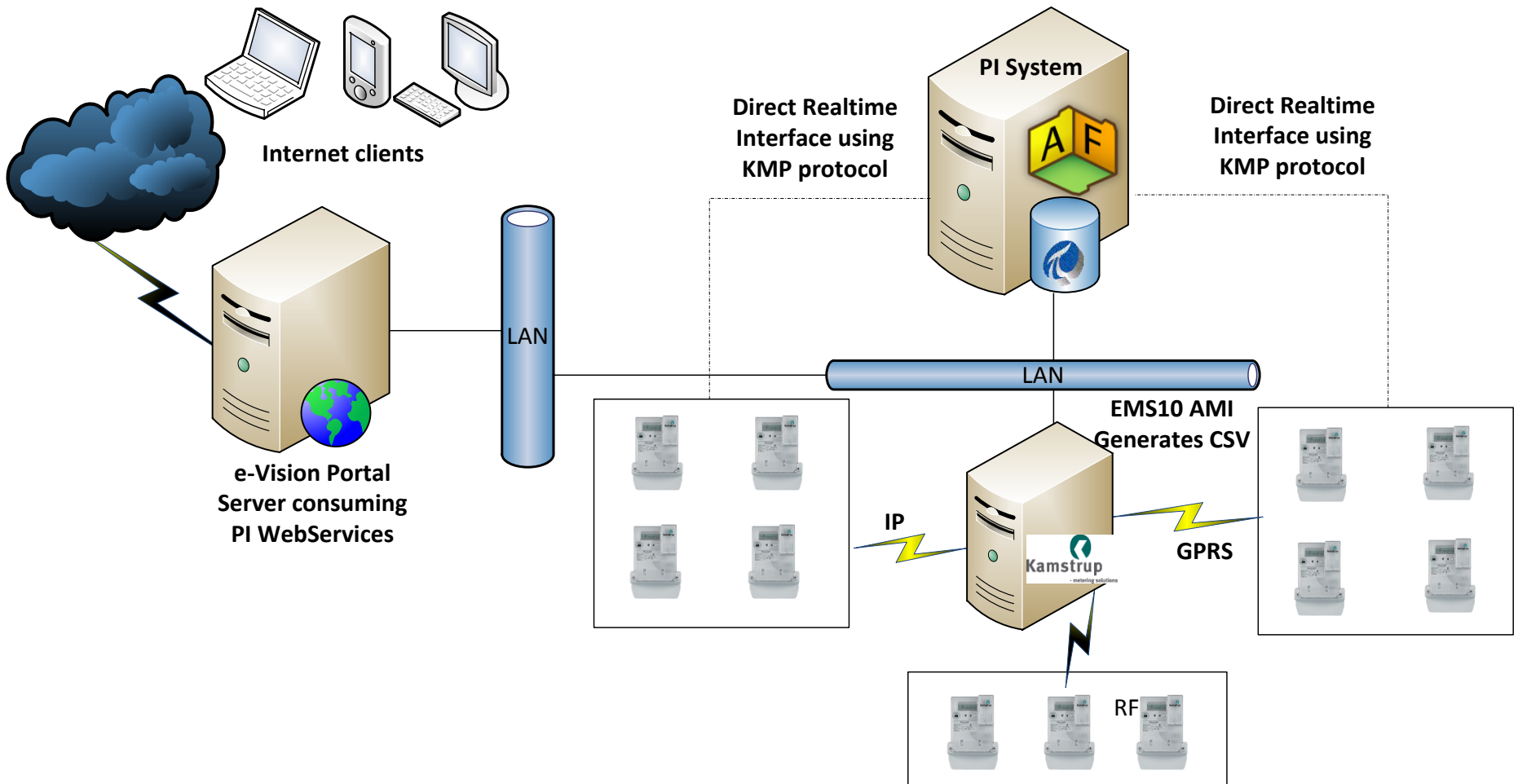
- Development of a direct real time interface using a Kamstrup proprietary protocol between the PI System and the smart meters
- One meter reading every second
- Works with IP and GPRS communication

Consumption comparison issue

- Function originally foreseen in the portal
- Decision to use the PI System to manage, aggregate and store the load profiles
 - Define consumption profile characteristics
 - Regression of the consumption profile characteristics into 8 reference groups
 - Generation and storage of the comparison load profiles
 - Web service to deliver the requested load profile to the portal



PI System architecture





Demo

<https://e-vision.groupe-e.ch>

e-vision – welcome page

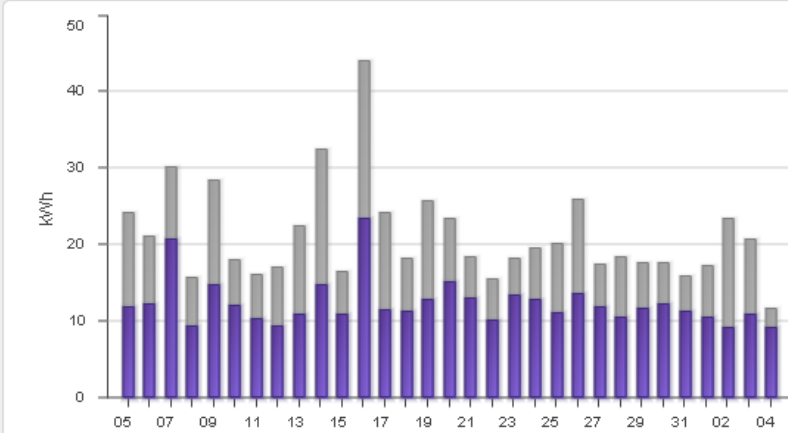
Willkommen
Mein Verbrauch
Mein Tarif
Ökotipps
Mein Konto

Willkommen, Geneviève Fritchley [Abmelden](#)

e-vision ▶ Willkommen ▶ ?

Zähler Maison Zeitspanne die 31 letzten Tage

Juni 2012



654 kWh das heisst **95 CHF**


Momentaner Verbrauch

Sehen Sie hier den momentanen Verbrauch Ihrer Elektrogeräte.

[Meinen momentanen Verbrauch ansehen](#)

Verbrauch: ■ Niedertarif ■ Hochtarif

Ökotipp des Tages



Benutzen Sie Druckminderer an den Wasserhähnen.


Wirksamkeit 👍 👍 👍 👍 👍

Kosten 💰 💰 💰 💰 💰

Schwierigkeit 👎 👎 👎 👎 👎

[Die Ökotipps ansehen](#)

Ihr durchschnittlicher Verbrauch im aktuellen Monat




-6.2%

Im Vergleich zum vorherigen Monat (Mai 2012)

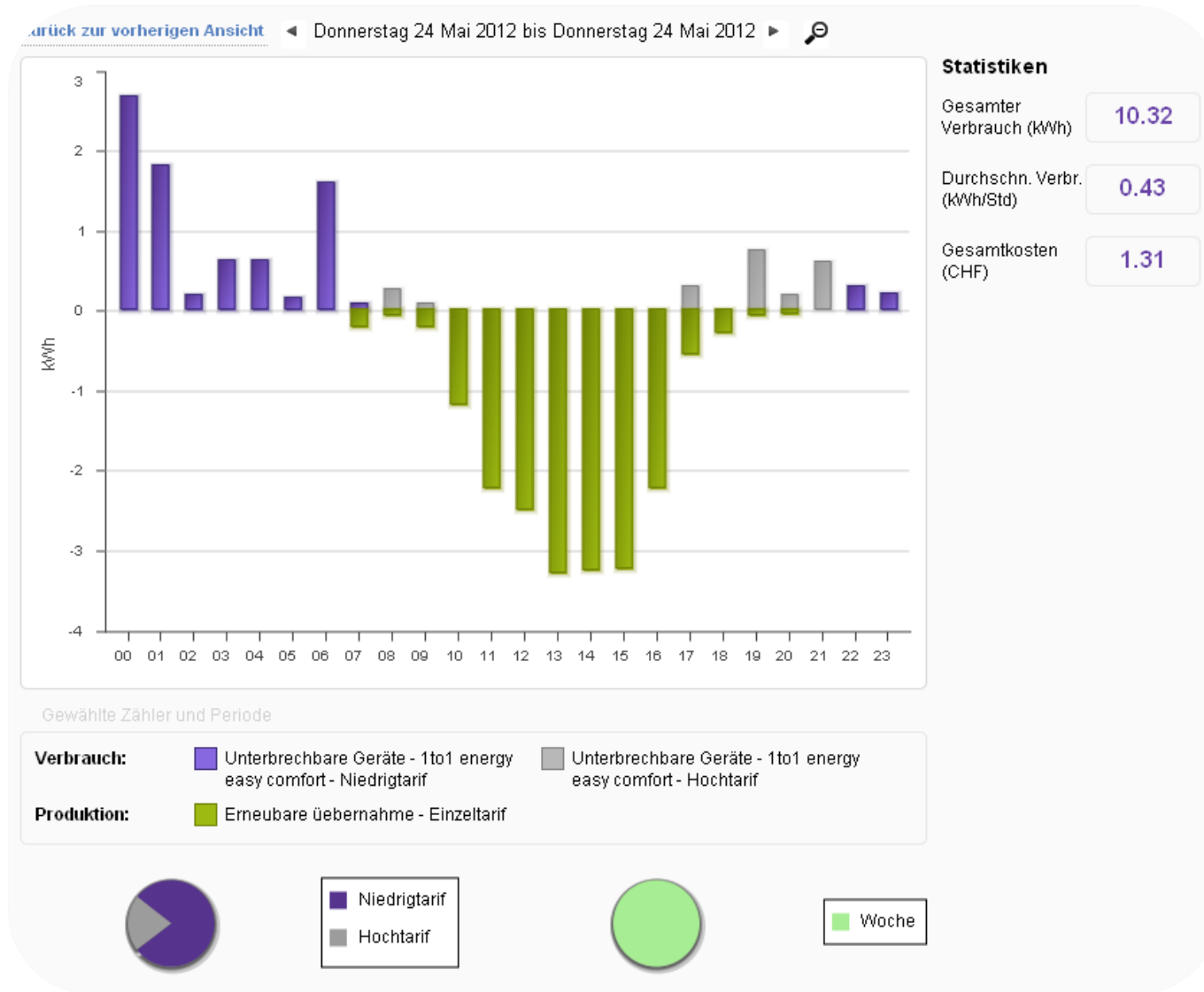
[Die Entwicklung meines Verbrauchs ansehen](#)

Schätzung Ihrer Rechnung für den aktuellen Monat



95CHF

with solar energy generation (24 hours)



Comparison with previous period

Entwicklung meines Verbrauchs



Filter

Zähler:

Messeinheit: kWh CHF

Übersicht über Andere Zeitspanne

die 31 letzten Tage

Vom:

bis:

Vergleiche

Möchten Sie Ihren Stromverbrauch vergleichen?

Nein danke

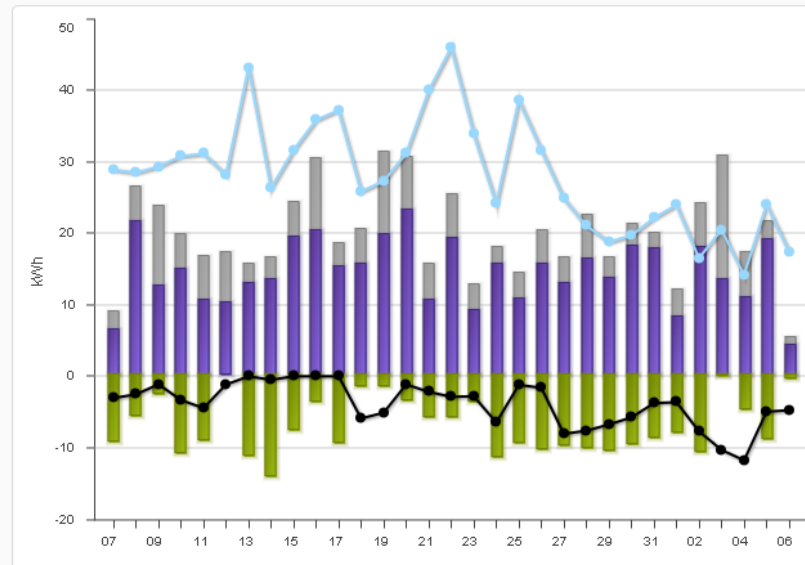
Ja, mit der letzten Zeitspanne

Ja, mit einem anderen Tarif

Ja, mit anderen Benutzern

[Unsere Tarife](#)

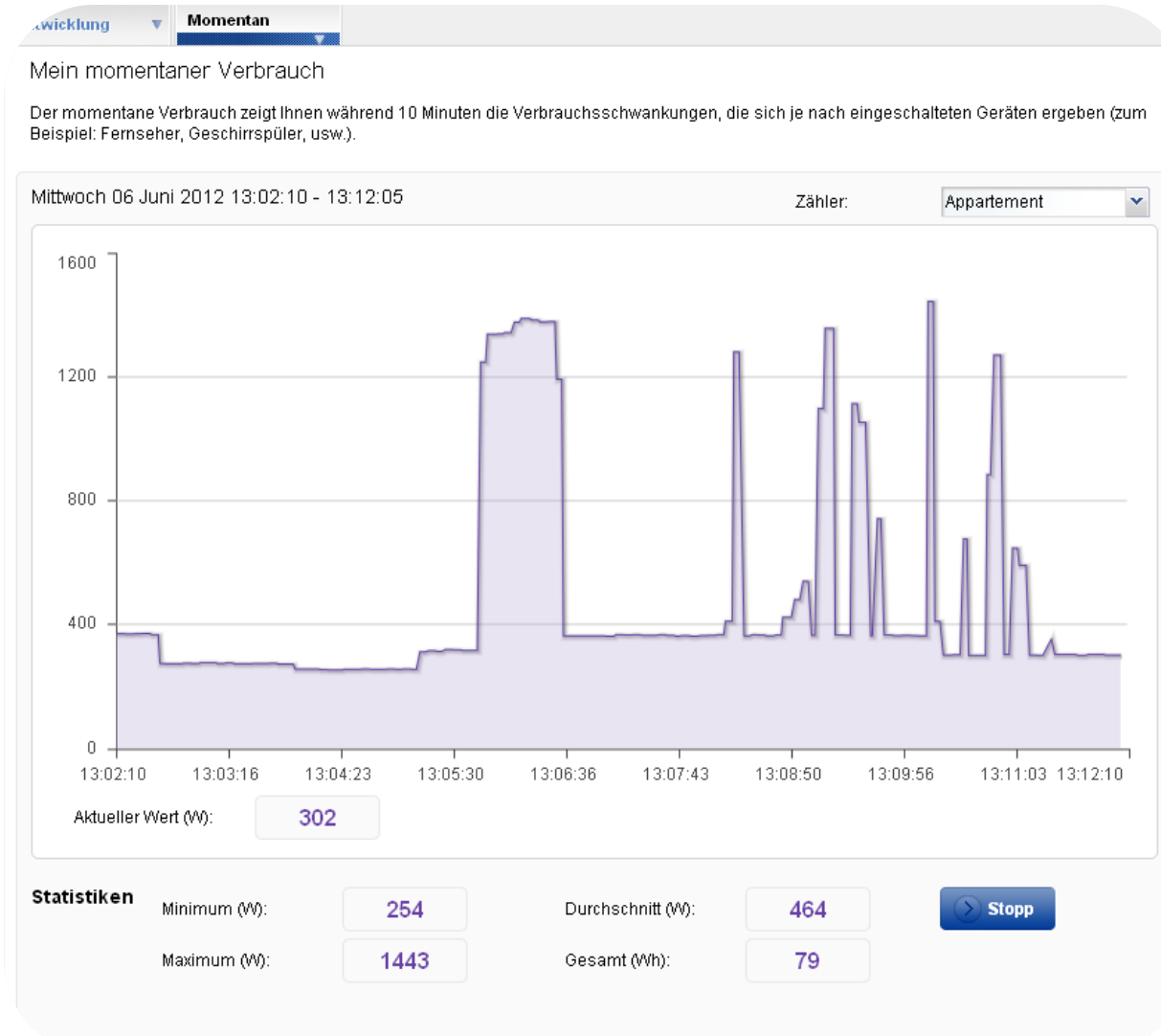
[Zurück zur vorherigen Ansicht](#) ◀ Montag 07 Mai 2012 bis Mittwoch 06 Juni 2012 🔍



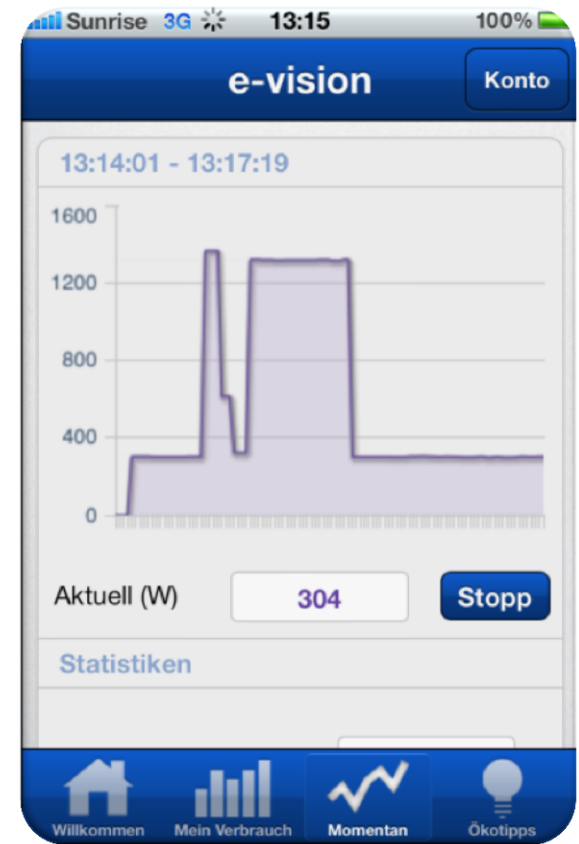
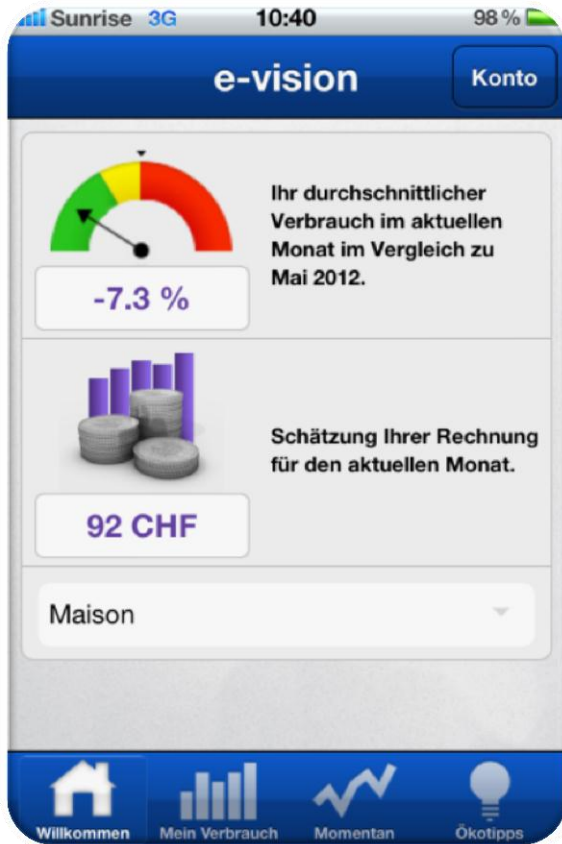
Gewählte Zähler und Periode

- Verbrauch:**
- 1to1 energy easy comfort - Niedertarif
 - 1to1 energy easy comfort - Hochtarif
- Produktion:**
- Einspeisetarif (15 Rappen/kWh) - Einheitstarif

e-vision – real time



e-vision - Mobile



<http://www.groupe-e.ch/e-vision>

Neue e-vision-Anwendung

- ▶ **Elektrizität**
1to1 energy
- ▶ **Ökostrom**
1to1 energy
- ▶ **Energieeffizienz**
1to1 energy e-help
- ▶ **Smart metering**
e-vision
- ▶ Login
- ▶ Preis und Bestellung
- ▶ Neuheiten / Informationen
- ▶ **Elektromobilität**
Move
- ▶ **Internetzugang**
powernet
- ▶ **Fernwärme**
Contracting
- ▶ **Unabhängige Produzenten**
- ▶ **Elektroinstallationen**
Groupe E Connect AG
- ▶ **Elektrohaushaltgeräte**
Groupe E Electroménager AG
- ▶ **Wartung und Unterhalt**
Groupe E Entretec AG
- ▶ **Netznutzung**

Ihr Stromverbrauch wird absolut transparent – Neu für die Schweiz

Groupe E lanciert e-vision, eine neue Online-Anwendung dank welcher Sie Ihren Stromverbrauch zu Hause visualisieren und unter Kontrolle bringen können. Mit e-vision können Sie Ihren Verbrauch sowie die daraus entstehenden Kosten in Echtzeit verfolgen. Dank wertvollen Ratschlägen können Sie mit e-vision auch Energie sparen.

Jetzt verfügbar auf PC, Tablets und Smartphone. [Bestellen Sie e-vision](#)

Loggen Sie sich ein

Nur für Kunden mit einem Zugangskonto für e-vision.

E-mail:

Passwort:

[Passwort vergessen?](#)

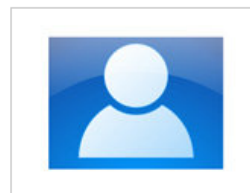
Einloggen

Testen Sie die Demo



Entdecken Sie die Funktionen von e-vision: momentaner Verbrauch Ihrer Elektrogeräte, Entwicklung des Verbrauchs, Tipps usw.

Preis und Bestellung



Bestellen Sie die e-vision-Dienstleistung mit unserem Online-Formular.

Neuheiten / Informationen



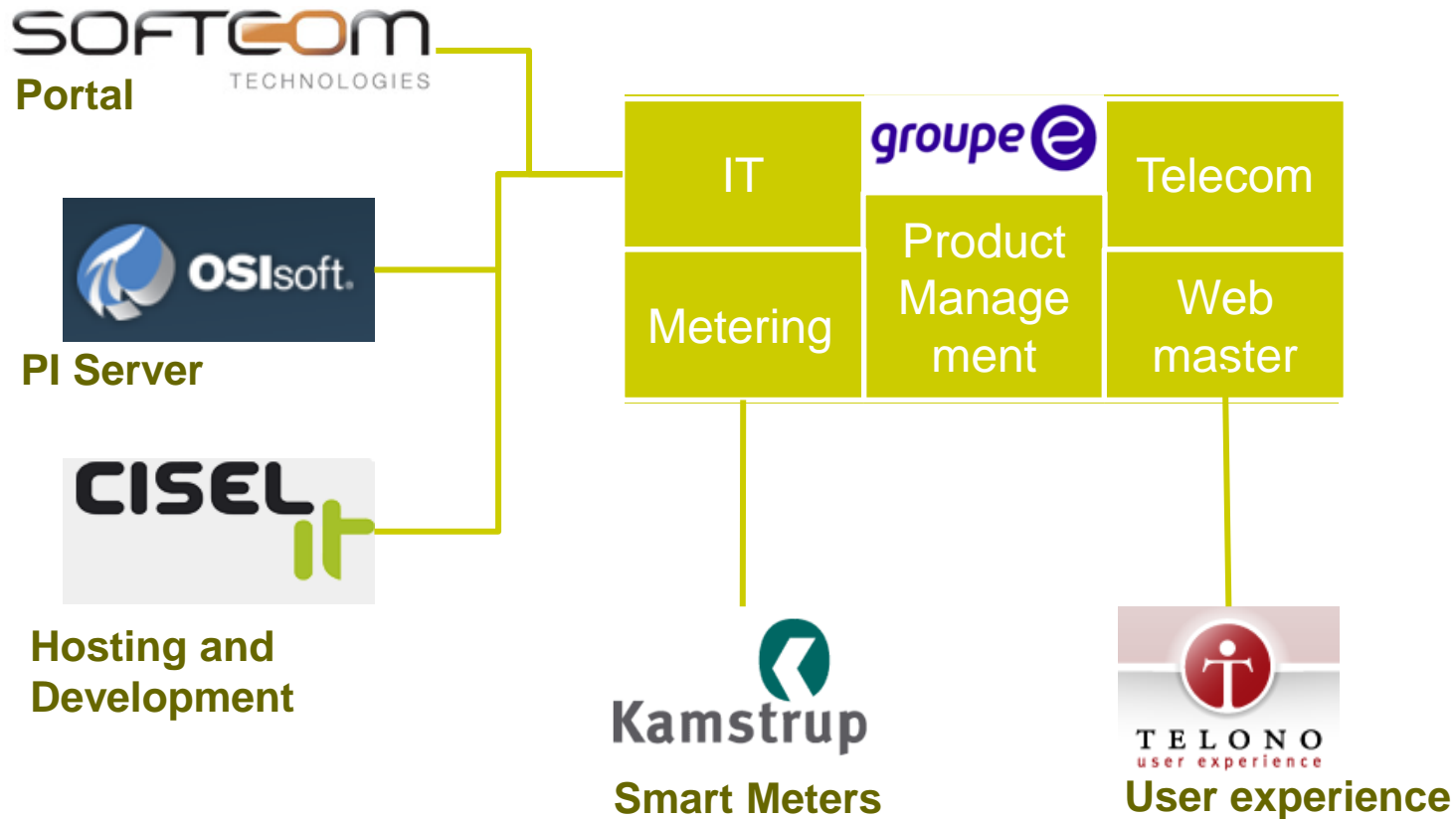
Überprüfen Sie überall und jederzeit Ihren Verbrauch, dank der neuen Anwendung e-vision für Smartphone.

In summary

- The smart metering pilot project is based on a SOA scalable infrastructure
 - ➔ An essential factor in the decision to launch the e-vision product as a service to customers outside the smart metering pilot
 - ➔ Basis for an eventual rollout
- With the PI System we found an elegant technical solution to solve business issues

Conclusion

Success factor : involve the right business partner





Merci

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