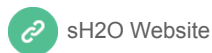


From: **SmartH2O** andrea@idsia.ch
Subject: SmartH2O Newsletter - Issue2
Date: 15. Dezember 2015 16:43
To: hilty@ifi.uzh.ch

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SmartH2O Newsletter - Issue 2

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SmartH2O Newsletter

Dear Colleagues,

this is the second issue of our SmartH2O newsletter, which gives us the opportunity of informing you on the recent developments and progress made in the SmartH2O project. Our aim is to investigate how can we stimulate sustainable water consumption by providing users with timely feedback on their behaviour and with incentives to drive their motivation.

The beginning of the second year of the project life brought some exciting news. Two new partners have joined our project: EMIVASA, the water utility of Valencia, in Spain, and Universitat Politècnica de València, as scientific counterpart to EMIVASA. This is a really welcome addition, as the UK case study had to be postponed due to delays in the procurement process for a smart meeting solution for the Greater London area (more than 8 million smart meters to be deployed within 2030), which make it no longer compatible with our project lifetime. Thames Water is still an active project partner, but the focus of their work has shifted to the testing of the SmartH2O platform to tariff trials and panel discussions related to innovative water pricing, thanks to a close collaboration with the University of Manchester.

The new partner, EMIVASA, is a world leader in the use of smart meters for monitoring water consumption. They have an installed base of more than 400,000 meters, and the SmartH2O project is really excited to be able to access this massive number of potential users.

Alongside the UK and the Spanish case study, the Swiss case study is progressing well. The Swiss



Alongside the UK and the Spanish case study, the Swiss case study is progressing well. The Swiss users have now started experimenting with the advanced SmarH2O portal with gamification features, and prizes and incentives can drive them in improving their water use behaviour. At the same time the platform has already proven itself to be valuable in detecting water leaks that have gone unnoticed so far. A small success for our project, but an important water saving for some users!

Sincerely,
Andrea Rizzoli,
SmarH2O Project Director

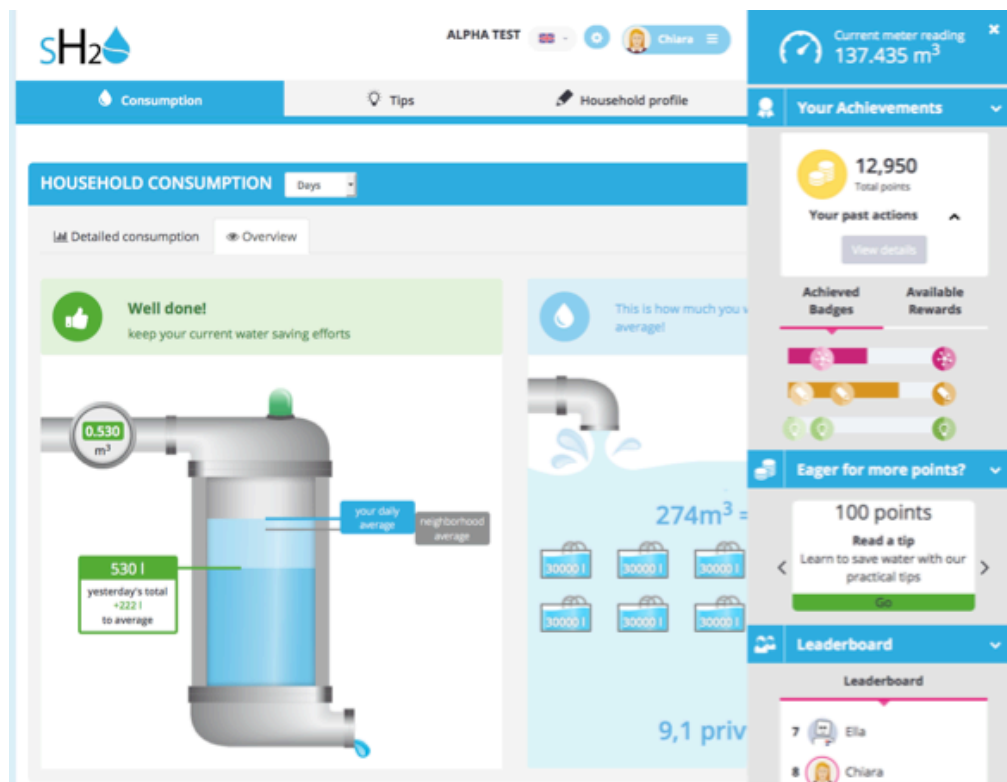
In this issue:

- **Advanced SmarH2O [web portal launch](#)**
- **SES customer [survey launch](#)**
- **Report from [ICT2015 event and Utility Week](#)**
- **Registrations open for [SmarH2O Summer School](#)**
- **SmarH2O [events, deliverables and publications](#)**
- **Selected [news and events](#)**

Join the [SmarH2O innovation community](#) to keep track of new developments, give your feedback on our application concept and generate new ideas & projects!

Launch of the advanced SmarH2O web portal

In fall 2015, SmarH2O launched its **advanced web portal** to water consumers in the Locarno region, promoting it through press releases, info letters from the utility and demos at local events.



The advanced SmarH2O portal brings about many innovative elements that go beyond monitoring water consumption. It introduces **gamification elements such as points, badges, rewards and a leaderboard**. This means, that all actions users can perform on the SmarH2O portal, like reading a water saving tip, providing profile information about their household and water consumption, or simply logging into the portal to check their water stats, earn them points. With the collected points, users can build up their online reputation in different areas. They can become a **super profiler, smart saver, or community influencer**. Based on their achieved badges and total point score, users are ranked on a leaderboard with the other users from their neighborhood or town, so everyone can see who is actively participating. And if you couldn't care less about a little online competition with your neighbor, there is more. Points can also be redeemed in exchange for real rewards. Users can exchange their virtual points for the **latest water saving gadgets** to save water even more effectively without compromising their daily comforts, or the **SmarH2O Drop! card game**.

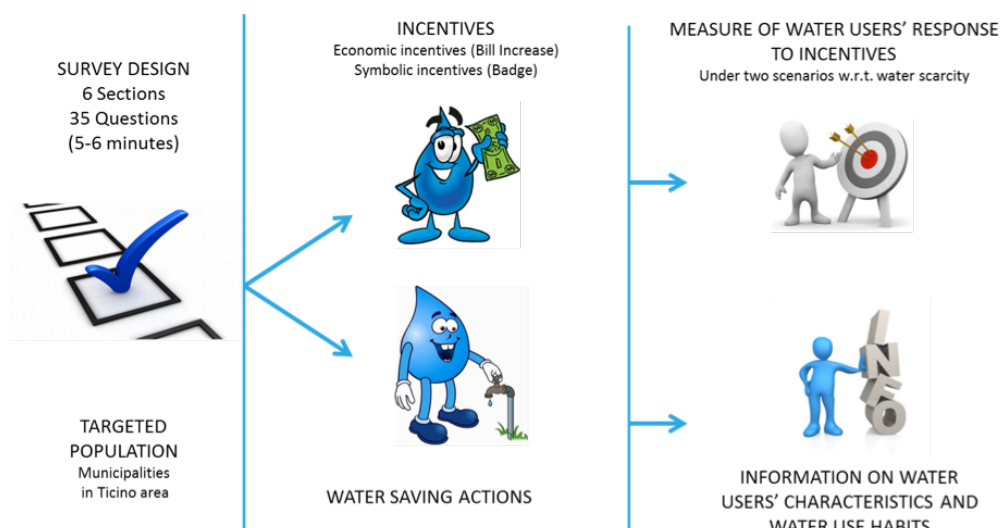
SmarH2O portal also aims to **display water consumption** in such a way that is more fun and understandable than the typical charts one often is confronted with in similar contexts. A water pipe metaphor shows the household's most recent daily (weekly or monthly) total consumption in comparison to ones average or the neighbors' average. In the next release, SmarH2O will go even further than that. **Users will receive points for their water saving efforts**, and they will be able to set their own water saving goals and earn double the points if they reach them. The changes in users' water consumption, their attitudes towards water saving and the learning effect of using the system will be measured at several points during the pilot. Based on this, data insights shall be gained about the effectiveness of different incentives and strategies for behavioral change towards water saving.

To learn more, watch our latest [SmarH2O portal video demo](#).

Launch of SES customer survey

In fall 2015, **SmarH2O launched a survey** to water customers of Società Elettrica Sopracenerina (SES) in the Ticino region, and promoted it through info letters from the utility and local events.

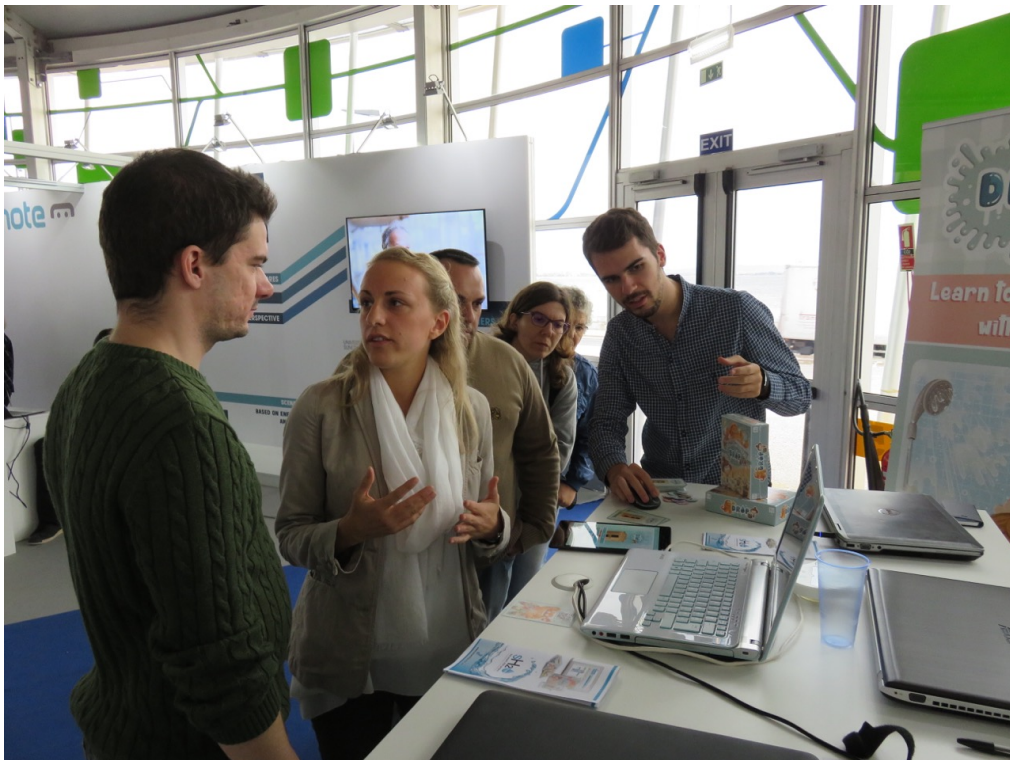
The survey aimed at collecting information about **water consumption habits and willingness to undertake water saving actions** among Ticino water users.



The survey is organized into six sections. The first three were dedicated to gathering personal and house data, whereas the last three were specifically focused on water uses, customers' awareness of water conservation need and their willingness to save water. The survey was designed as to expose potential respondents to different combination of **water scarcity scenarios and incentive schemes** aimed at achieving water conservation. The proposed incentives were the awarding of a "best friend of environment" badge contingent upon the performing of water saving actions and an increased water bill. The **water saving actions** we focused on were: shorter showers, switching from baths to showers, switching of washing machine use to the night, shorter garden irrigation, less water consuming houseplants and balcony watering and more efficient swimming pool management.

ICT2015 event and Utility Week

From October 18 to October 22, the city of Lisbon hosted **ICT2015**, the largest ICT event organized by the European Commission. [Ict4water](#) was selected as one of the **five flagship initiatives** invited to present their work at the off-site pavilion, located at the Praça do Comércio. Smarth2O, as a member of the [Ict4water](#) cluster, had the opportunity of meeting a mix of students, tourists, local citizens, conference attendees and high profile guests. Visitors got an insight in the current research on smart water systems and the problems Smarth2O project is addressing, discovering the **Smarth2O web portal** and playing the **Drop! game**.



Few days later, Smarth2O participated in the **European Utility Week**, held in Vienna on 3-5 November 2015. During this event, over 10,000 professionals from around the world presented, exhibited and shared insights on how the utilities sector and market can move forward. Smart technologies, Big Data, ICT, supply solutions and customer relationship represent key opportunities for the utility sector.

After almost two years since the beginning of the project, these two events presented the perfect opportunity to **get feedback** and compare the Smarth2O progress with **potential partners and**

opportunity to **get feedback** and compare the Smarth2O progress with **potential partners and competitors** working on customized energy, water and gas distribution, smart meter producers, multi-utilities and business entities.

Smarth2O summer school

The Smarth2O Summer School on **Smart Systems for Urban Water Demand Management** has been launched and is now [open for registration!](#) The school and the associated conference will be held on **August 22-25 in the Monte Verità, Switzerland**, with a spectacular view on Lake



Maggiore.

The conference will focus on managing household water demand using **ICT and smart economics**: from monitoring consumption with innovative smart meters, to profiling users' behaviour, to understanding how different stimuli can nudge behavioural change, and, finally, how integrated ICT solutions can be adopted by water utilities.

More specifically, the following topics will be central to the conference:

- Profiling user water consumption, end use disaggregation of consumption;
- Innovative smart meter technologies for water usage monitoring and control;
- Modelling user behaviour: improved user awareness for behavioural change;
- Modelling user behaviour: the impact of innovative water pricing policies;
- Modelling user behaviour: the role of gamification in behavioural change in the water domain;
- The water and energy nexus in urban context;
- Open data and standards for smart water systems;
- Software platforms and tools for smart water management.

The conference is particularly aimed at **young researchers and PhD students** willing to focus their work on solving compelling real world problems with relevant impact on the society, by bringing in innovative ideas.

More information can be found at <http://www.smarth2o.ch/smartwater/>.

Smarth2O past events

- European Utility Week (Vienna, 3-5 Nov 2015)
- ICT 2015 Innovate, Connect, Transform (Lisbon, 20-22 Oct 2015)
- Smarth2O Platform launch in Terre di Pedemonte, Swiss case study site (11 Oct 2015)
- ICT4Water Open Day (Barcelona, 22 Sept 2015)
- SUPSI @ EXPO 2015 (Milan, 26 Sept 2015)
- ICT for Water workshop (Milan, 15 Sept 2015)
- ICT4Dev – Making the change by Web (Milan, 19 June 2015)
- Aquality Forum (Milan, 21 April, 2015)
- ICL water management workshop (London, 11-12 Apr 2015)
- Project presentation to NABU and BUND, two biggest environmental associations in Germany (Berlin, 9-12 March 2015)
- Visit and project presentation to Kennedy School (29 Jan 2015)

Smarth2O Deliverables available online

Read about our project results in our [public deliverables](#).

Read about our project results in our [papers collection](#).

- D1.1 Management Processes
- D2.1 Use cases and early requirements
- D2.2 Final requirements
- D3.2 First user behavioral models - *SmarrH2O algorithms for water end-use disaggregation and user modelling*
- D4.1 First social game and implicit user information techniques - *Persuasive games for water efficiency*
- D5.1 Review of pricing instruments
- D6.1 Delivery management plan and testing specification - *Developing, testing, and releasing the SmarrH2O software platform*
- D6.2 Platform architecture and design
- D6.3 Platform implementation and integration - initial prototype
- D7.1 Validation methodology - *The design of SmarrH2O case studies*
- D8.2 Technology watch report - *Exploring the market dimensions*
- D9.1 Dissemination tools and materials
- D9.2 First dissemination report

SmarrH2O Journal Publications

- Cominola, A., Giuliani, M., Piga, D., Castelletti, A., Rizzoli, A.E. (2015), "**Benefits and challenges of using smart meters for advancing residential water demand modeling and management: A review,**" Environmental Modelling & Software, vol. 72, pp. 198-214, doi:10.1016/j.envsoft.2015.07.012
- Cominola, A., Giuliani, M., Piga, D., Castelletti, A., Rizzoli, A.E. (under review), "**A Hybrid Signature- based Iterative Disaggregation algorithm for Non-Intrusive Load Monitoring,**" Applied Energy.
- Piga, D., Cominola, A., Giuliani, M., Castelletti, A., Rizzoli, A.E. (2015), "**Sparse optimization for automated energy end use disaggregation,**" in IEEE Transactions on Control Systems Technology, vol.PP, no.99, doi:10.1109/TCST.2015.2476777

SmarrH2O Conference Publications

- Cominola, A., Giuliani, M., Piga, D., Castelletti, A., Rizzoli, A.E. (2015), "**Modeling residential water consumers' behaviors by feature selection and feature weighting,**" IAHR World Congress, 28 June-3 July, The Hague, NL.
- Cominola, A., Giuliani, M., Piga, D., Castelletti, A., Rizzoli, A.E. (2015), "**The SmarrH2O platform: advancing residential water management by smart metering and data intensive modeling of consumers' behaviors,**" EWRI World Congress, 17-21 May, Austin, TX.
- Cominola, A., Nanda, R., Giuliani, M., Piga, D., Castelletti, A., Rizzoli, A.E., Maziotis, A., Garrone, P., Harou, J.J. (2014), "**The SmarrH2O project: a platform supporting residential water management through smart meters and data intensive modeling,**" Submitted to AGU Fall Meeting 2014, 15-19 Dec, San Francisco, CA. Vol.1, pp.6
- Fraternali, P., Baroffio, G., Pasini, C., Galli, L., Micheel, I., Novak, J., Rizzoli, A.E. (2015), "**Integrating real and digital games with data analytics for water consumption behavioral change: a demo,**" 8th IEEE/ACM Int. Conf. on Utility a. Cloud Computing, Cyprus, 7-10 Dec.
- Galli, L., Fraternali, P., Pasini, C., Baroffio, G., Diniz dos Santos, A., Acerbis, R., Riva, V. (2015), "**A gamification framework for customer engagement and sustainable water usage promotion,**" IAHR World Congress, 28 June-3 July, The Hague, NL.
- Harou, J.J., Garrone, P., Rizzoli, A.E., Maziotis, A., Castelletti, A., Fraternali, P., Novak, J., Wissmann-Alves, R.,

Ceschi, P.A. (2014), "**Smart metering, water pricing and social media to stimulate residential water efficiency: opportunities for the Smarth2O project**," In Proc. of Int. Conf. on Water Distribution Systems Analysis (WDSA 2014), 14-17 July, Bari, Italy.

- Micheel, I., Novak, J., Fraternali, P., Baroffio, G., Castelletti A., Rizzoli, A.E. (2015), "**Visualizing and gamifying water & energy consumption for stimulating behavior change**," In FSEA 2015 - Fostering Smart Energy Applications workshop at Interact 2015, 15 Sep, Bamberg. University of Bamberg Press. 2015.
- Piga, D., Cominola, A., Giuliani, M., Castelletti, A., Rizzoli, A.E. (2015), "**A convex optimization approach for automated water and energy end use disaggregation**," IAHR World Congress, 28 June-3 July, The Hague, NL.
- Rizzoli, A.E., Castelletti, A., Cominola, A., Fraternali, P., Diniz dos Santos, A., Storni, B., Wissmann-Alves, R., Bertocchi, M., Novak, J., Micheel, I. (2014), "**The Smarth2O project and the role of social computing in promoting efficient residential water use: a first analysis**," In Proc. of the 7th Int. Congress on Environmental Modelling and Software, 15-19 June, San Diego, California, USA. ISBN: 978-88-9035-744-2.

Oral Contributions:

- Cominola, A. (2015), "**Smarth2O: a platform integrating smart water meters with ICT and data intensive modelling to support residential water management**," Oral contribution at 2nd Int. Electronic Conf. on Sensors and Applications, online, 29 Nov - 3 Dec 2015
- Cominola, A., Giuliani, M., Castelletti, A. And, M. (2015), "**Interpreting residential water consumption and consumers' behavioural structure through multi-clustering techniques**," Oral contribution at Int. Conf. on Sustainable Water Management, Murdoch University, Perth (Western Australia), 29 Nov - 3 Dec 2015
- Cominola, A., Giuliani, M., Castelletti, A., Piga, D., Rizzoli, A.E. (2015), "**Modelling and managing urban water demand through smart meters: Benefits and challenges from current research and emerging trends**," Oral contribution at AGU Fall Meeting, San Francisco (USA), 14-18 Dec 2015

Selected News and Events

- Water Opportunities in the [draft Horizon 2020](#) Work Programme 2016-2017
- The [International Water Conference](#) (IWC) is a strong educational conference, founded with an emphasis on commercial free discussions on technology and will be held on November 15-19 in Orlando.
- [Imagine H2O's Accelerator](#) is currently accepting applications for the Data Challenge & Accelerator - the 7th water innovation program.
- The UK Water Efficiency Awards 2016. The [Waterwise biannual UK Water Efficiency Awards](#) are the most high profile awards scheme in the UK to recognize the water efficiency achievements of the public, private and third sector organizations who promote water efficiency. Deadline to enter the awards 31st December 2015.
- Next [EIP \(European Innovation Partnerships\)Water Conference](#) [Water Conference](#) will take place on 10th Feb 2016 in Leeuwarden, The Netherlands, with the following overall theme: "How is water innovation succeeding in Europe?"
- New Year is right around the corner. To plan ahead for the next [UNC Water Institute conferences](#).
- UN acknowledged the [World Toiled Day](#) on 19th Nov 2015, with a number of world wide events. Don't forget the [UN World Water Day](#) in the coming year 22nd March 2016

events . Don't forget the [UN World Water Day](#) in the coming year, 22nd March 2016,

- The [WaterSmart Innovations](#) Conference & Expo, in Las Vegas October 5-7, 2016, showcases leaders in innovative water efficiency technology and service.
- World Water Week in Stockholm is the annual focal point for the globe's water issues. It is organized by [SIWI](#). This year in August was the jubilee year for both the Water Week and the Stockholm Water Prize. The theme was [Water for Development](#). In 2015, over 3,000 individuals and close to 300 convening organizations from 130 countries participated in the Week. Registration for the [2016 World Water Week in Stockholm](#) opens in April, 2016.
- The Amsterdam International Water Week Conference 2-6 November 2015 'Integrated solutions for a circular economy and resilient cities' is closed. The [next conference](#) will be in 2017.

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