IRIS

Integrated and Replicable Solutions for Co-Creation in Sustainable Cities

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| **Project Acronym:** | IRIS |
| **Project Full Name:** | Integrated and Replicable Solutions for Co-Creation in Sustainable Cities |
| **Grant Agreement:** | No 774199 |
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# Deliverable 10.5

## Final social media and content distribution monitoring report

| | |
|---|---|
| **Work Package:** | WP 10: Communication and Dissemination |
| **Task:** | T10.4: On and offline communications backbone |
| **Lead Beneficiary:** | ESCI |
| **Due Date:** | 31 March 2023 (M66) |
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## Disclaimer

# Executive Summary

The deliverable D10.5 (Data and analysis of the reach and influence of online activities) presents the outcome of the IRIS project's online activity until month 66. The IRIS Communication and Dissemination (C&D) strategy was initially presented in the deliverable D10.1 (Communication and dissemination plan with conference agenda) and was updated in D10.10 (First update of communication and dissemination plan). The C&D aims to create awareness, understanding and action among targeted audiences. It contains a mix of compelling content and a proactive use of online, offline and face-to-face opportunities aiming to make the project visible, credible and inspirational.


A modern and dynamic website (https://irissmartcities.eu) that moves away from being a repository and towards being a 'digital anchor' for IRIS content is the main pillar of the dissemination and communication strategy. Priority is given to an easy to update and well-connected website with IRIS content featured in the media or sectorial sites, twitter feeds, interviews and blog posts front and centre. The website has gathered a total of 43.521 visitors during the entire project.

In addition to the main website, a decision was taken to also create an "IRIS Solutions Showcase website" (https://showcase.irissmartcities.eu/) which presented a user-centric way of profiling the best of IRIS insights for cities, experts and citizens to take concrete actions with. This site gathered 908 visitors.

IRIS project has established a strong presence in the social media space as it is active in Twitter, LinkedIn, YouTube, SlideShare, ResearchGate and Instagram. The project uses the unique characteristics and audiences of each platform to better distribute specific content and connect with influencers. Twitter is the flagship platform in social media, where the @IRISsmartcities account has more than 1.000 followers and 800.000 impressions. Apart for Twitter, IRIS is also popular in the other platforms with 1.395 followers and 127.354 impression in LinkedIn; 49.223 video views in YouTube's interviews and webinars; and 55.874 views in SlideShare's presentations and infographics.

The IRIS project achieved its C&D goals for the project, as it managed to establish its presence in the field of smart and sustainable cities (be visible) and to exploit the achieved results so far by distributing more editorials, articles and deliverables (be credible) and to deliver and disseminate the final project results (be inspirational) in the field of smart and sustainable cities.

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# Abbreviations and Acronyms (in alphabetical order)

| Abbreviation | Definition |
|---|---|
| C&D | Communication and Dissemination |
| CC | Creative Commons |
| CIP | City Information Platform |
| CMS | Content Management System |
| EU | European Union |
| ICT | Information Communication Technology |
| LH | Lighthouse |
| PR | Public Relations |
| RES | Renewable Energy Sources |
| ROI | Return on Investment |
| SCC | Smart Cities and Communities |
| VNR | Video News Release |
| WP | Work Package |

# 1. Introduction

## 1.1. Scope, objectives and expected impact

This deliverable D10.5 acts as an update to the previously submitted D10.4 (Interim social media and content distribution report) and contains an analysis of the project's online activity for the entirety of the project. The deliverable is part of the task T10.4 (On and offline communications backbone). This task contains the creation of both online and offline tools (i.e. website, social media accounts, printed materials, academic publications, etc.) that served the project partners to bring visibility and consistency to dissemination and communication efforts. However, only the results of online activities are reported to D10.4. the tools are reviewed in 10.9. It should also be noted that the data for the IRIS local microsites is reported in 10.8.

The deliverables D10.1, D10.10 and D10.11 (Communication and dissemination plan in month 1, 12 and 36) give the framework of the project's online communication and dissemination activities. The communication and dissemination plan is administered by a central communication and dissemination secretariat, who focus on engaging European and international audiences. Lead local correspondent(s) in each city ecosystem interact with their partners and the secretariat to develop locally effective actions, respectful of culture, language and objectives. Communication and dissemination are essential activities throughout the IRIS project lifestyle.

The document presents the results of the IRIS communication and disseminations activities in the following online channels:

- Project website available at https://www.irissmartcities.eu/
- Project showcase website available at https://showcase.irissmartcities.eu/
- Twitter account available at https://twitter.com/IRISsmartcities
- LinkedIn page available at https://www.linkedin.com/company/27090842/
- YouTube channel available at https://www.youtube.com/channel/UCVZPWV3_lx4xF1aXItY9E8w/
- SlideShare account https://www.slideshare.net/IRISSmartCities
- Instagram account available at https://www.instagram.com/irissmartcities/
- ResearchGate page available at https://www.researchgate.net/project/IRIS-Co-creating-smart-and-sustainable-cities

The above list shows the wide field of the IRIS online communication and dissemination activities.

In this update it is also worthy to note that throughout the years some monitoring tools became obsolete or were not as effective, the contents that follows reflects this evolution. Furthermore, this update also focuses on more shorter and concise analytics, helping the report to highlight essential outcomes and avoiding getting lost in data points that are not so consequential.

## 1.2. Relation to other tasks and deliverables

D10.5 is related to all WP10 activities, as they produce content for the IRIS website and social media accounts.

## 1.3. Deliverable Structure

The current document is organized in the following chapters:

**Chapter 1** is the introduction

**Chapter 2** present the methodology of the project's online approach, as well as the monitoring tools and the metrics that are used.

**Chapter 3** presents the impact of the IRIS activities in the project's seven online channels (i.e. website, Twitter, LinkedIn, YouTube, SlideShare, ResearchGate and Instagram).

**Chapter 4** presents the conclusions.

**Chapter 5** contains the references to external sources used in the document.

# 2. Methodology

## 2.1. Principals of the online approach

The IRIS Communication and Dissemination (C&D) strategy was initially presented in the deliverable D10.1 Communication and dissemination plan with conference agenda (IRIS Project, 2017) and was updated in D10.10 First update of communication and dissemination plan (IRIS Project, 2018). The C&D aims to create awareness, understanding and action among targeted audiences. It contains a mix of compelling content and a proactive use of online, offline and face-to-face opportunities.

Video, visuals, social media content, journalistic articles, citizen journalism and news releases are some of the planned activities to bring the project's story and personalities to life. The IRIS C&D secretariat applies a 'networked distribution' premise, privileging proactively placing IRIS content on websites, blogs, social and mass media (re)creating communications opportunities from zero. IRIS goes where target audiences are, rather than passively expect them to come to us. It is expected that the lead C&D contact points in each city ecosystem will also adopt this proactivity.

***From knowledge economy to broad socio-ecological transition*: IRIS dissemination & communication essentials**

**WHAT to disseminate and communicate**

- ✓ Compelling, credible and trusted written content for distribution to high-volume media & networks
- ✓ Clear and credible results, outcomes and experiences
- ✓ Powerful visual content
- ✓ 'Citizen Journalism' through IRIS local news desks
- ✓ Education and interaction opportunities with IRIS
- ✓ Features, Advantages, Challenges and Benefits of IRIS initiatives for each specific target audience

**HOW to disseminate and communicate- channels**:

*Earned:* ESCI network of 500+ mass media editors, journalists and broadcasters–plus professional media outlets. IRIS innovation task forces. Lighthouse and Follower city eco-system relationships, local innovation hubs, living labs and media networks. Citizen engagement & interactive activities.
*Shared:* Partnerships with EU platforms, national and international awareness initiatives (i.e. EUSEW, Mobility Week etc.) local eco-system distribution & traditional media, twitter, Instagram, YouTube, LinkedIn, syndicated content
Owned: Expert interviews, citizen journalist content, professional journalist produced articles, news releases, presentations, info graphics, videos – from professional news releases to social broadcasting, training, webinars, MOOCs.


*Q-Helix Actors Relationship Diagram | Credit: Karel Rodriguez*

**TO WHOM:** a broad 'quintuple helix' ecosystem of interdependent and connected audiences, each with their own viewpoints, storylines, objectives, testimonials and target audiences at both European and local/regional level

*Figure 1 – Overview of the IRIS communication and dissemination principals (IRIS Project, 2018)*

With a content-focused approach, IRIS explores a mix of Paid, Earned, Shared and Owned media, known as the 'PESO model' (Dietrich, 2014). As a research and demonstration project, IRIS is particularly rich in 'Owned' content and 'Shared' media. Communication and dissemination actors across the project

prioritise bringing IRIS insights to a wider audience and leveraging their personal, professional and institutional networks.

Online IRIS "Owned" media – such as LinkedIn company page, Twitter feed, SlideShare and irissmartcities.eu – **inform** dissemination targets with easily accessible and up to date content on project aims, progress and key contextual issues and challenges.

"Earned" media taps into the PR, investor and influencer engagement of WP10 lead ESCI at a European level and local C&D leads in each city. IRIS also considers paid media in the form of sponsored tweets and Facebook posts if it helps the C&D action meet an objective.

IRIS C&D approach aims to make the project visible, credible and inspirational (Figure 2):

**Visible (1st year):** The project establishes its presence in the field of smart and sustainable cities.

**Credible (2nd year):** The project creates more editorial/distribution and more deliverables to be able to 'unpack' and exploit.

**Inspirational (3rd – 5th year):** The project produces results, awards, achievements and peer-to-peer (for both experts & citizens) seeing "we can do this".

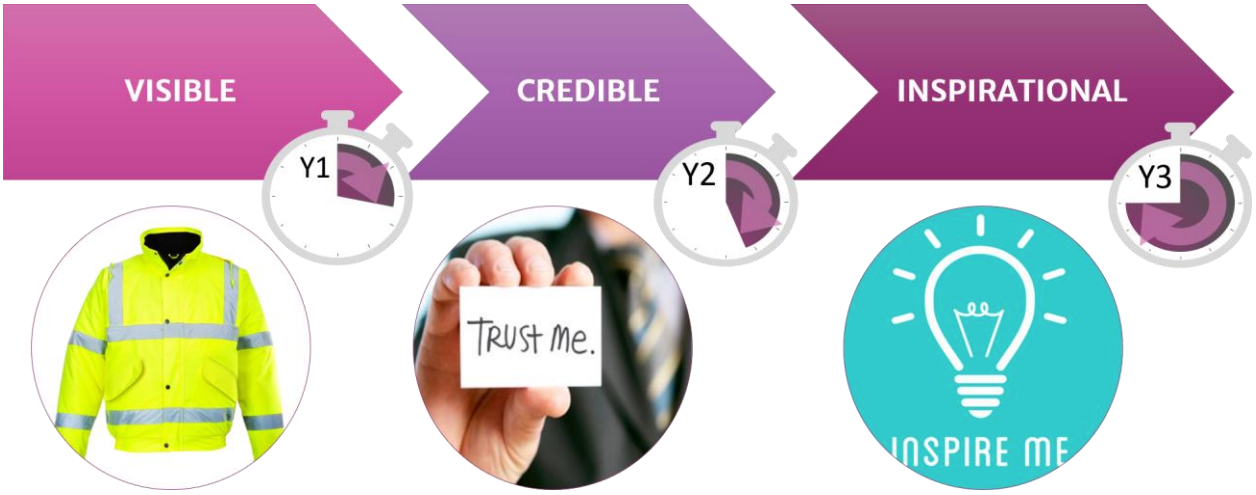


*Figure 2 – IRIS C&D approach to be Visible, Credible and Inspirational*

All IRIS partners work together to achieve a maximum transfer of information and shareable research results. Each organisation and individual connected to IRIS is able to discuss and reference the project in an **engaging** way. Regular content, clear branding, active social media and 'elevator pitch' discussion points are made available to all. Specific and clear calls to action will aim to secure the **commitment** and contribution of the most gifted and enthusiastic as for every concrete action IRIS wants to achieve – we need to have in some way engaged with 100 more (Figure 3).

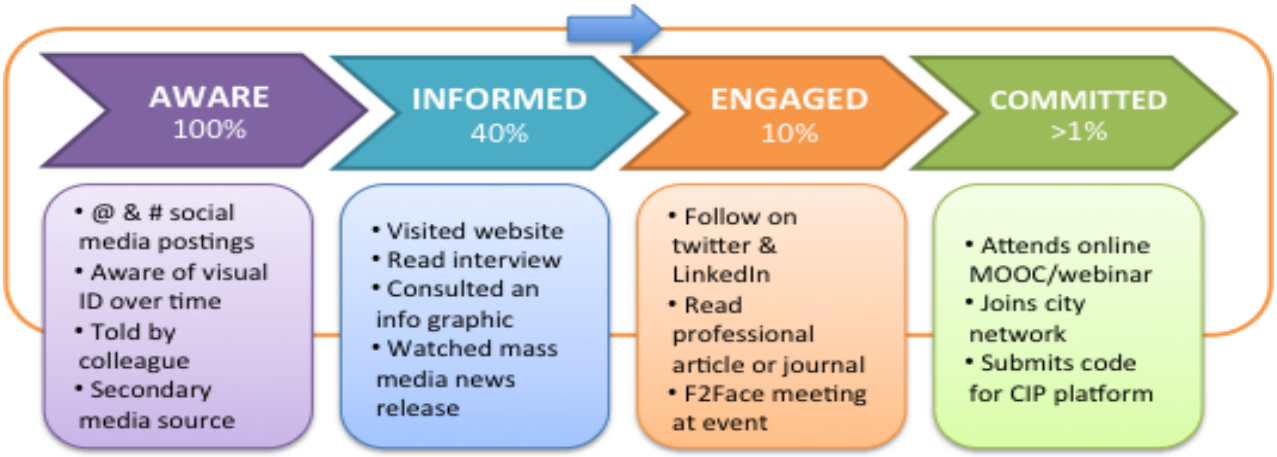


*Figure 3 – The Dissemination Funnel' with assigned objectives and call to action (IRIS Project, 2018)*

## 2.2. Social media monitoring

Social media monitoring is the process of using social media channels to track, gather and mine the information and data of certain individuals or groups, usually companies or organizations, to assess their reputation and discern how they are perceived online (Social Media Monitoring, 2013). Social media monitoring is also known as social media listening and social media measurement.

In order to evaluate the IRIS online activity, we continuously monitor all conversations, articles and posts that the project publishes on the website and on its social media accounts. This allows us to measure the success of our online activities and the impact of the IRIS Smart Cities brand, as well as to listen what others are saying about the IRIS project. In the IRIS case, social media monitoring and analysis is used to:

- Understand topics and tactics that drive social engagement
- Identify and engage target audiences
- Measure the most effective channels and distribution tactics
- Maintain IRIS reputation
- Understand public sentiment about IRIS objectives
- Monitor and participate in relevant conversations
- Engage influencers in relative industries and sectors
- Listen and react to users' questions and comments

A number of core performance metrics is used to measure the outcome of IRIS online activity in different platforms. Many of these metrics are cross-platform (used in many platforms) while other as platform specific.

For the IRIS website the following metrics are important:

- **Visitors:** Number of users who have initiated at least one session during the date range.
- **Sessions (Visits):** Total number of Sessions within the date range. A session is the period time a user is actively engaged with the website.
- **Page views:** The total number of pages viewed. Repeated views of a single page are counted.

- **Pages / Session:** The average number of pages viewed during a session. Repeated views of a single page are counted.
- **Sessions / User:** The average number of Sessions per user.
- **Average Session Duration:** The average length of a Session.

For the social media accounts the following metrics are important:

- **Impressions:** Number of times users saw an update (tweet, post, video, etc.) in their timeline.
- **Views / Reads:** Number of times users view a video, visit the update's page, read a publication, etc.
- **Mentions:** Number of times users mentions the name of the social media account in their updates.
- **Interactions:** Number of times a user has interacted with an update. This includes all clicks anywhere on the post (including hashtags, links, avatar, username, etc), shares, comments, follows, and likes.
- **Followers / Subscribers:** Number of users that receive regular updates for new published content.
- **Visitors:** Number of unique users that visit the account page or any other page (i.e. post page, image page, etc.).

## 2.3. Monitoring tools

IRIS project uses a variety of monitoring tools to gather data regarding the outcome of the project's online activity. In particular the following tools are used:

### Google Analytics[1]

Google Analytics is a web analytics service offered by Google that tracks and reports website traffic (Google Analytics, 2020). As of 2020, Google Analytics is the most widely used web analytics service on the web (Usage statistics of traffic analysis tools for websites, 2020). Users of the service can see exactly how visitors are interacting with their site. Analytics reveals which pages they spend the most time on or which pages they visit before leaving the site without taking action. Insights like these help webmasters make high-value site improvements. Using Analytics, webmasters can see how many new visitors they have gained through their online channels, and how that number has changed over time.

### Digimind[2]

Digimind Social Listening platform helps marketers understand audiences, analyse sentiment, and monitor market trends (Digimind - Social Listening Platform, 2020). The monitoring platform offers integrations with many social media platforms (i.e. Twitter, Facebook, LinkedIn, etc.) and collects data from the connected social media accounts. Platform's users create predefined and custom reports using advanced filters such as location, country, sentiment, and personalized tags. These reports help marketers to have a clear picture of their organisation's online reputation.

[1] https://analytics.google.com/
[2] https://www.digimind.com/social-listening

### HootSuite[3]

HootSuite is a social media management platform, which takes the form of a dashboard and supports social network integrations for Twitter, Facebook, Instagram and many more. It provides various functionalities such as scheduling social posts, easily managing the content of the account, tracking social ROI of the account and retrieving information on relevant we conversations. (Hootsuite Platform, 2020).

### BrandWatch (formerly Falcon)[4]

BrandWatch is a social media management platform with functionalities similar to HootSuite. In addition, it also offers an advance social media listening tool to monitor online mentions and reputation across different channels, including social media outlets, forums and blogs.

### Vicinitas[5]

Vicinitas is a tool that analyses posts and followers from a Twitter account to presents in-depth analytics on how users are engaging with the published content.

### Tweepsmap[6]

Tweepsmap is a GEO targeted Twitter analytics and management platform that enables users analyse and engage with their Twitter followers. It helps its users understand what region their followers live in, by country, state or city, what language they speak and what time zones they live in. Tweepsmap also allows users to track the growth of their followers, momentum and reach, as well as help them analyze their competitors and customers. Listen and explore consists of exploring of hashtags, tweet alerts, and measuring impact and reach (Tweepsmap, 2020).

### Followerwonk[7]

Followerwonk is an online tool that allows the analyse of Twitter followers and the reputation of a Twitter account. It provides an approximate geolocation of followers, the language they speak, and how many followers they have. It also generates a word cloud to summarise the biographies of the followers.

### Native analytics of the social media platforms

All social media platforms offer analytics tools to help users understand how the content they share on the platform grows their business. The functionality of these tools varies from advances solutions (i.e. Twitter, LinkedIn, and YouTube analytics) to more primitive (i.e. Instagram, SlideShare and ResearchGate analytics).

[3] https://hootsuite.com/
[4] https://www.brandwatch.com/
[5] https://www.vicinitas.io/
[6] https://tweepsmap.com/
[7] https://followerwonk.com/

# 3. Impact of the IRIS online activities

## 3.1. Overview

During the first half of the project, IRIS published online a significant amount of content that includes video, visuals, social media updates, journalistic articles, citizen journalism and news releases, and built a strong online presence. The project's website had 43.521 visitors. By using the unique characteristics and audiences of each platform, IRIS managed to better distribute specific content and connect with influencers. Twitter is the flagship platform in social media, where the @IRISsmartcities account has more than 1.000 followers and 800.000 impressions. Apart for Twitter, IRIS is also popular in the other platforms with 1.395 followers and 127.354 impression in LinkedIn; 3.052 video views in YouTube's interviews and webinars; and 55.874 views in SlideShare's presentations and infographics. Table 1 present the overview of the project's online activity and its impact.

*Table 1 – Overview of the IRIS project online activity and impact*

| Medium | Content | Followers / Subscribers / Visitors | Impressions | Visits / Views / Reads |
|---|---|---|---|---|
| Website | 125 news articles, 11 academic publications, 5 infographics and 64 public deliverables | 43.521 | N/A* | 58.259 |
| Twitter | 906 tweets | 1.377 | 848.871 | N/A |
| LinkedIn | 706 posts | 1.395 | 127.354 | N/A |
| YouTube | 44 videos | 360 | 1.932.353 | 49.223 |
| SlideShare | 15 presentations and 5 infographics | 1 | N/A | 55.874 |
| ResearchGate | 2 scientific papers | 9 | N/A | 44 |
| Instagram | 106 posts | 431 | 4.634 | N/A |

*Non-Applicable

The following figure shows accumulative metrics from the IRIS social media accounts.

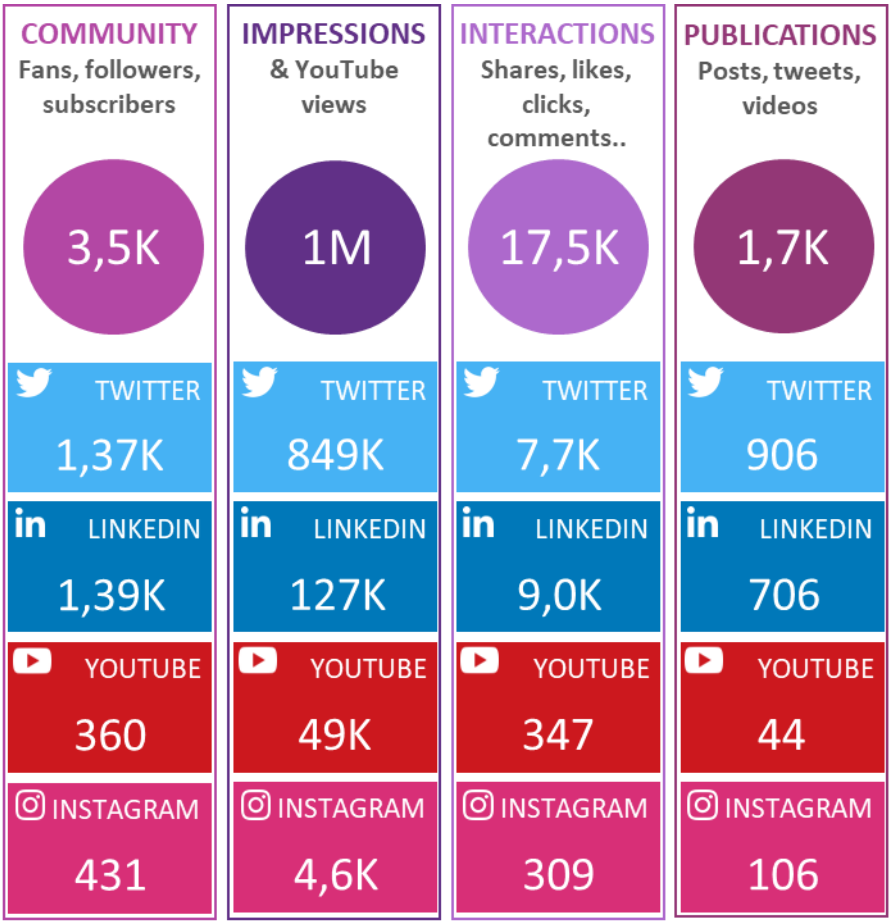


*Figure 4 – Overview of the IRIS activity and impact in social media*

## 3.2. IRIS Website

A **modern and dynamic website** that moves away from being a repository and towards being a 'digital anchor' for IRIS content is the pillar of the dissemination and communication strategy. Priority is given to an easy to update and well-connected website with IRIS content featured in the media or sectorial sites, twitter feeds, interviews and blog posts front and centre.

The IRIS website is publicly available at https://irissmartcities.eu hosted by CERTH web server facilities in Greece and maintained by CERTH/ITI. An important characteristic of this layout is that it is responsive to smart devices such as smart phones and tablets, allowing easy use and facilitating presentation of information, as illustrated in the following images:

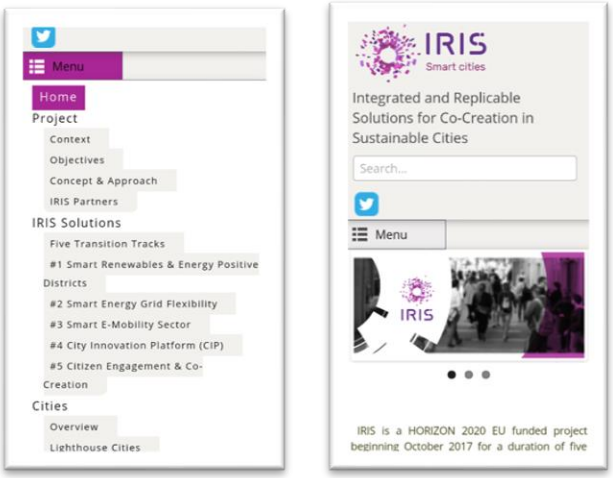


*Figure 5 Website layout on smart phone*

Apart from the pages that present the IRIS project, the website contains dynamic content such as news articles, the project's academic publications, and the public deliverables. **By March 2023, 125 news articles, 11 academic publications and 64 public deliverables have been published.**

The Google Analytics service is used to track and report website traffic. The following tables and figures present the main metrics.

*Table 2 – The main IRIS website statistics*

| Visitors | Sessions (Visits) | Page views | Pages / Session | Sessions / User | Avg. Session Duration | Avg. Time on Page |
|---|---|---|---|---|---|---|
| 43.521 | 58.259 | 105.127 | 1,80 | 1,34 | 1m 41s | 2m 05s |

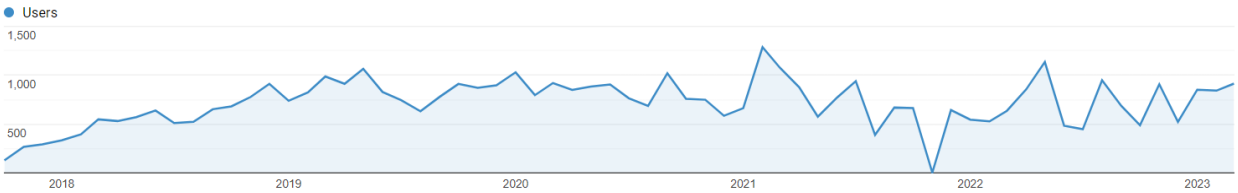


*Figure 6 IRIS website visitors per month*

The website gathers visitors from all over the world.

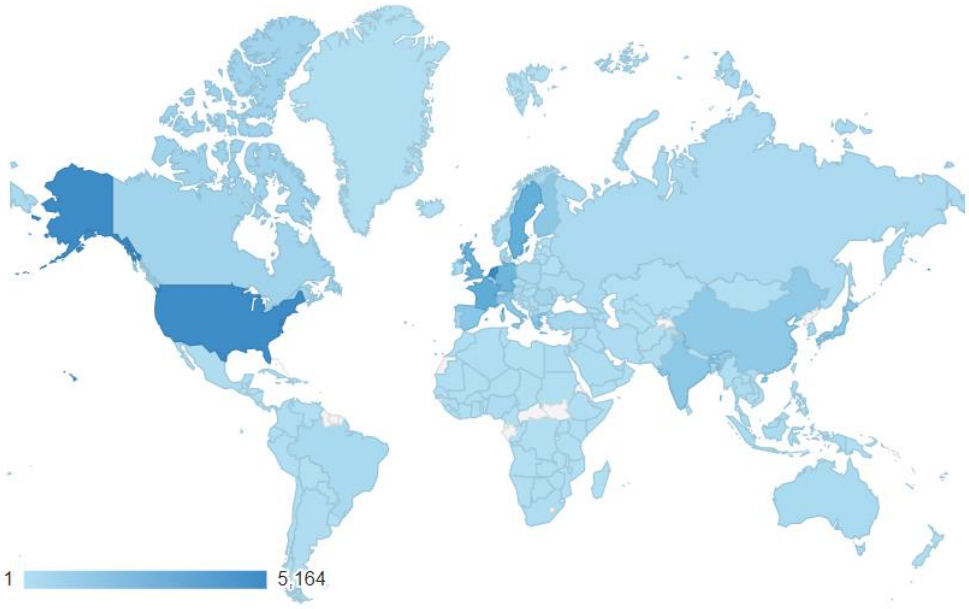


*Figure 7 – Website visitors' map*

Although, most of the visitors come from countries where an IRIS partner exists (the Netherlands, France, Sweden, etc.), United States, the United Kingdom, Germany and Japan supplement the list of the top ten countries.

| | Country | Users | % Users |
|---|---|---|---|
| 1. | Netherlands | 5,164 | 11.74% |
| 2. | United States | 5,076 | 11.54% |
| 3. | France | 3,095 | 7.04% |
| 4. | Sweden | 2,908 | 6.61% |
| 5. | United Kingdom | 2,683 | 6.10% |
| 6. | Germany | 2,546 | 5.79% |
| 7. | Spain | 1,452 | 3.30% |
| 8. | Japan | 1,407 | 3.20% |
| 9. | Greece | 1,395 | 3.17% |
| 10. | Finland | 1,359 | 3.09% |

*Figure 8 - Top 10 countries of website visitors*

Beyond the homepage ( / sign in the figure below), the Utrecht demonstration, the Public Deliverables page, and the Objectives & Ambition page are the three most popular pages of the IRIS website (Figure 9).

| | Page | Pageviews | % Pageviews |
|---|---|---|---|
| 1. | / | 30,292 | 28.81% |
| 2. | /content/utrecht-netherlands | 4,099 | 3.90% |
| 3. | /public-deliverables | 3,216 | 3.06% |
| 4. | /content/objectives-ambition | 2,817 | 2.68% |
| 5. | /content/sp-technical-research-institute-sweden-sp-sweden | 2,326 | 2.21% |
| 6. | /partners | 2,296 | 2.18% |
| 7. | /irissmartcities/ | 2,220 | 2.11% |
| 8. | /content/context | 2,217 | 2.11% |
| 9. | /content/gothenburg-sweden-0 | 2,199 | 2.09% |
| 10. | /contact | 1,606 | 1.53% |

*Figure 9 – The 10 most viewed IRIS website pages*

When looking at the web pages about the Solutions, the most viewed is the introductory page (i.e., Five transition tracks), followed by the #1 Track page. The other tracks received slightly less attentions, with the #2 Track page being the least viewed Table 3. Regarding the pages about the cities, the Lighthouse cities were viewed more often than the Follower cities, except for Nice. The pages about Utrecht and Gothenburg were the most viewed, followed by Vaasa Table 3.

*Table 3 – Views of the IRIS website pages about Solutions, Lighthouse cities and Follower cities.*

| Page title | Pageviews | |
|---|---|---|
| **Solutions** | | |
| Five transition tracks | 1.314 | 1,2% |
| #1 Renewables and Energy Positive Districts | 1.118 | 1,1% |
| #2 Flexible Energy Management and Storage | 571 | 0,5% |
| #3 Intelligent Mobility Solutions | 797 | 0,8% |
| #4 Digital Transformation and Services | 772 | 0,7% |
| #5 Citizen Engagement and Co-Creation | 830 | 0,8% |
| **Lighthouse Cities** | | |
| Utrecht | 4.664 | 4,4% |
| Nice | 204 | 0,2% |
| Gothenburg | 2.458 | 2,3% |
| **Follower Cities** | | |
| Vaasa | 703 | 0,7% |
| Alexandroupolis | 518 | 0,5% |
| Sanda Cruz de Tenerife | 56 | 0,1% |
| Foscani | 37 | 0,0% |

The website gained 3.353 downloads of its various resources. The derivable files are the materials that attracted most interest among visitors; especially D4.2, which is the most downloaded document. Table 4 shows the five most downloaded materials since the beginning of the project.

*Table 4 – The five most downloaded documents from the IRIS website*

| Resources | Downloads | |
|---|---|---|
| D4.2 Functional & technical requirements for integrated, interoperable and open solutions, standards and new business models | 134 | 4,0% |
| D1.2: User, Business and Technical Requirements of T.T #1 Solutions | 98 | 2,9% |
| D1.1: Report on the list of selected KPIs for each Transition Track (TT) | 91 | 2,7% |
| D5.3 Launch of T.T. #1 Activities on Smart renewables and near zero energy district (Utrecht) | 86 | 2,6% |
| Factsheet - Battery energy storage systems experiences in IRIS lighthouse cities | 79 | 2,4% |

Most of the visitors (55%) discover the IRIS website through organic search (i.e., by clicking on the results of a relevant search query), and several (34%) arrived on the page directly (e.g., via bookmarks).

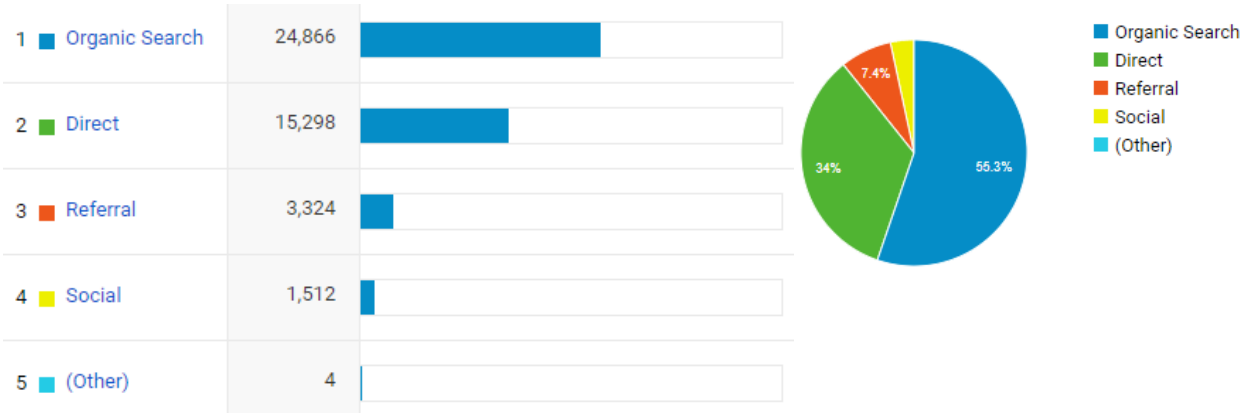


*Figure 10 - Top channels for visitors' acquisition*

IRIS activity on social media contributes to the acquisition of a smaller number of visitors in the IRIS website in comparison to other sources of traffic. These visitors are acquired mainly through LinkedIn, Twitter and Facebook (Figure 11).

| | Social Network | Sessions | % Sessions |
|---|---|---|---|
| 1. | LinkedIn | 930 | 41.74% |
| 2. | Twitter | 836 | 37.52% |
| 3. | Facebook | 438 | 19.66% |
| 4. | Scoop.it | 7 | 0.31% |
| 5. | YouTube | 5 | 0.22% |

*Figure 11 Acquisition of IRIS website visitors through social media*

### 3.2.1. IRIS Showcase Website

**Since March 2023, the Showcase website has gained 908 users, 2.107 pageviews and 162k events (e.g., video plays, downloads, etc.).** The following table presents the main metrics.

*Table 5 – The showcase IRIS website statistics*

| Visitors | Sessions (Visits) | Page views | Events | Avg. Session Duration |
|---|---|---|---|---|
| 908 | 1.376 | 2.107 | 162.231 | 00:58 |

Utrecht and Gothenburg are the most viewed pages about showcase cities, while Nice only has less than 100 views.

*Table 6 Top 10 most viewed pages.*

| Page title | Pageviews | |
|---|---|---|
| IRIS Smart Cities Showcase - Co-creating smart and sustainable cities | 980 | 47% |
| Utrecht | 222 | 11% |
| Gothenburg | 147 | 7% |
| Renewables & Energy Positive Districts | 135 | 6% |
| Nice | 96 | 5% |
| Intelligent Mobility | 88 | 4% |
| Citizen Engagement | 78 | 4% |
| Flexible Energy Management & Storage | 67 | 3% |
| Innovation Management | 60 | 3% |
| Digital Transformation | 54 | 3% |

Most of the traffic is direct (69%, n=948 sessions), and only 14% and 11% of the traffic is from social media and organic search, respectively. Unlike the main website, the showcase website attracts especially visitors from the United States (47%). Other common visitors are from the IRIS partners' countries, such as the Netherlands and Sweden.

*Table 7 Top 10 countries source of traffic.*

| Country | Visitors | |
|---|---|---|
| United States | 424 | 47% |
| Netherlands | 114 | 13% |
| Sweden | 60 | 7% |
| France | 47 | 5% |
| Finland | 45 | 5% |
| Spain | 27 | 3% |
| Germany | 26 | 3% |
| United Kingdom | 18 | 2% |
| Austria | 16 | 2% |
| Belgium | 14 | 2% |

## 3.3. Twitter account

From month one of the project, IRIS has been very active on social media and values the huge potential reach it gives to both professional and public audiences. Twitter is preeminent among social media for smart city content and thought leaders. Twitter also provides a useful listening post and strategic watch on key issues and developments.

IRIS has become a key influencer on Twitter during the course of the project. **@IRISsmartcities has published 906 tweets counts over 1.376 followers and several highly favoured influencers among followers and regular interactions.**

*On Twitter, IRIS promotes the project's activities and achievementas well as the achievements of other Smart Cities and Communities (SCC) projects.*

Table 8 shows the overall activity in the Twitter.


*Figure 12: IRIS on Twitter*

*Table 8 – Overview of IRIS Twitter account*

| Tweets | Followers | Impressions | Interactions | Interaction/ Tweet | Mentions (3/22 – 3/23) |
|---|---|---|---|---|---|
| 906 | 1.376 | 848.871 | 7.776 | 8,6 | 398 |

The proper use of hashtags and user mentions connects IRIS with relevant content and users, and favours the visibility and engagement of the tweets. For example, Figure 13 shows one the most popular tweets, which gained 3.294 impressions and 186 interactions by applying these strategies.


*Figure 13 IRIS Most popular IRIS tweet*

IRIS followers are mostly related to smart cities research, development and innovation, and to the energy sector, including Horizon projects. Figure 14 shows a word cloud made with the most recurring words from the followers' biography.


*Figure 14 IRIS Word cloud of IRIS Twitter followers' biographies*

Most of the @IRISsmartcities followers come from countries where an IRIS partner exists, especially from the Netherlands, France, and Sweden (Figure 15 and Table 9). Still, as the map below shows, IRIS has a global reach on Twitter.

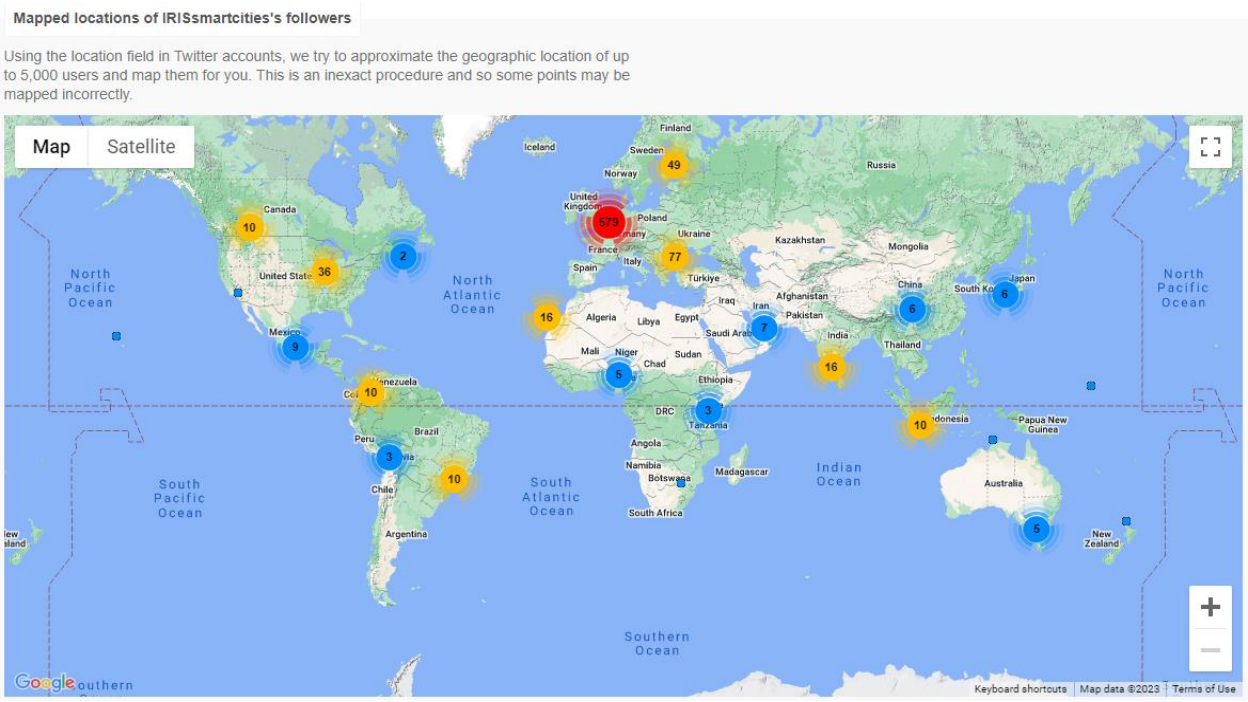


*Figure 15 – Global map of the @IRISsmartcities followers*

*Table 9 – Top 10 countries of IRIS Twitter followers*

| Country | Fans | |
|---|---|---|
| Sweden | 283 | 30% |
| Netherlands | 170 | 18% |
| France | 123 | 13% |
| Belgium | 51 | 5% |
| Spain | 35 | 4% |
| Germany | 34 | 4% |
| Italy | 31 | 3% |
| Greece | 21 | 2% |
| Finland | 19 | 2% |
| Portugal | 19 | 2% |

IRIS followers list includes several highly favoured influencers who are experts, organisations and companies. (Figure 16). In particular, several EU organisations accounts follow IRIS on Twitter.

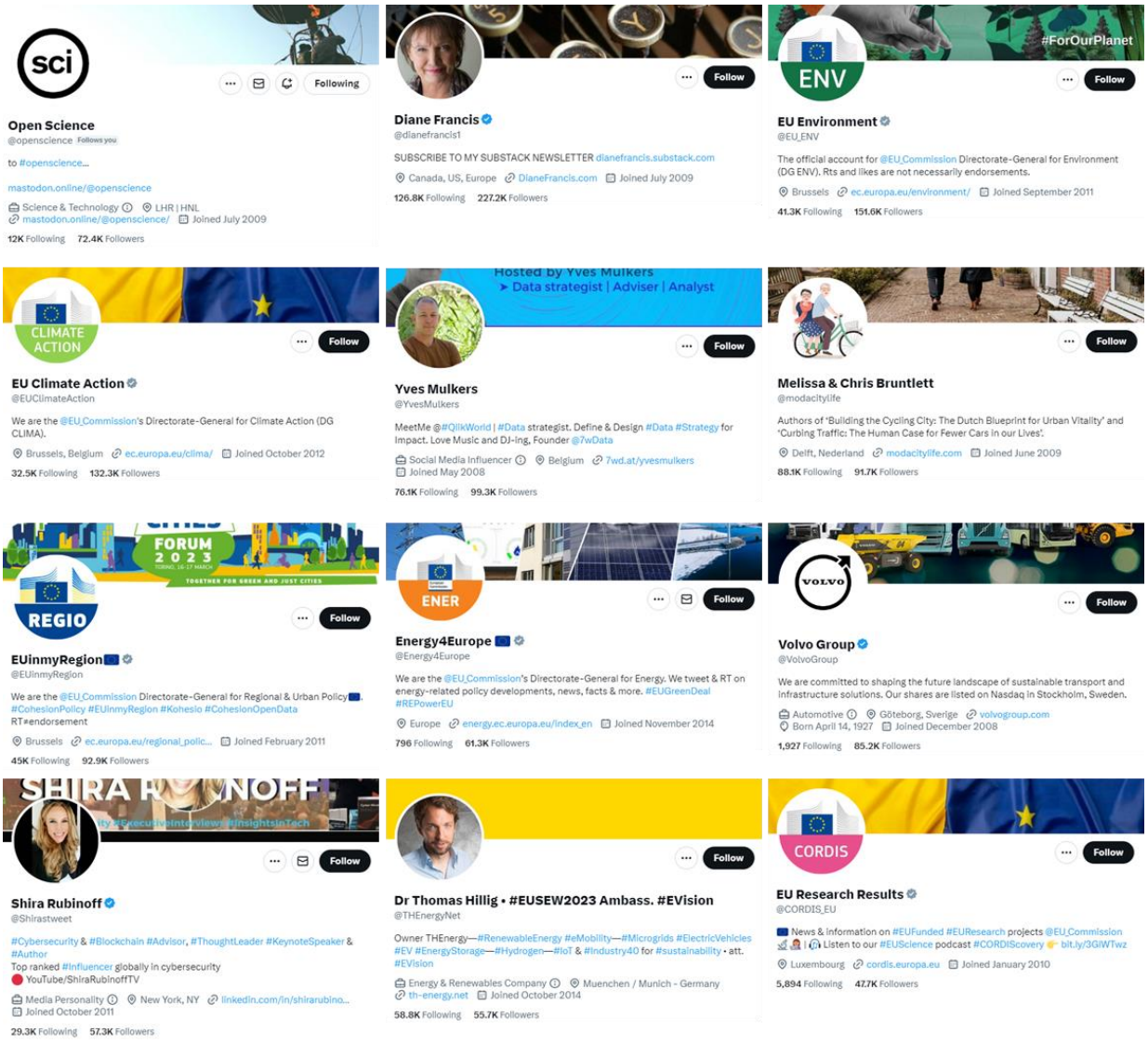


*Figure 16 IRIS Twitter account – Top follower influencers*

The analysis of Twitter mentions of IRIS shows that in the last 12 months the project was mentioned 398 by 148 unique accounts, reaching 1.2 million impressions. Most of these mentions were from European countries, especially Sweden (n=55), the Netherlands (n=50) and Spain (n=23). The word cloud below shows the hashtags, keywords, and phrases that occur more often in the project mentions. Two locations were also mentioned the most in association with IRIS: Utrecht and Gothenburg. It is likely these two case studies attracted much attention on Twitter (Figure 17).


*Figure 17 Word cloud of the IRIS Twitter mentions*

## 3.4. LinkedIn Page

LinkedIn is an online platform for business and employment-oriented social networking services. An account in such an online platform is of major importance for IRIS since it facilitates the communication with specific target groups and online communities such as ICT professionals, researchers, technical innovation groups and engineers. Maintaining contact with such groups and individuals does not only assist in communicating the project's results and content in such audience but also in finding contribution and support by specialists in certain domains essential for the project.

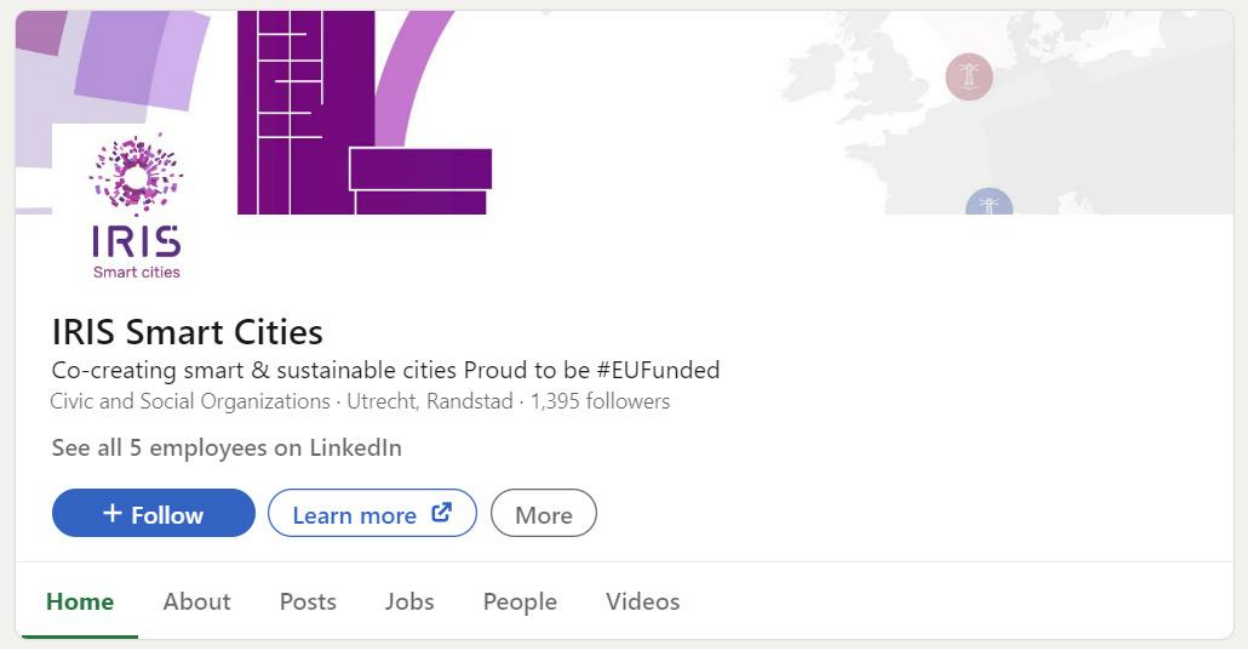


*Figure 18 IRIS on LinkedIn*

**During the length of the project (1/10/2017 – 31/3/2023), the IRIS organisation in the LinkedIn platform published 706 posts and manage to attract 1.395 followers.** Though at M30 the LinkedIn page had fewer followers than the Twitter account (a few hundred against more than a thousand), over the last years of the projects it reached a slightly bigger following. In this way, IRIS expanded its reach and influence both Twitter and LinkedIn. Table 10 presents the main metrics of the IRIS activity in LinkedIn.

*Table 10 – Overview of IRIS LinkedIn activity*

| Posts | Impressions | Followers | Reactions | Shares | Clicks |
|---|---|---|---|---|---|
| 706 | 127.354 | 1.395 | 3.428 | 422 | 4.394 |

An important metric that shows how efficient is the IRIS activity in the LinkedIn is the **"Engagement rate"**. Engagement rate is calculated as: ((Reactions + Comments + Shares) / Impressions) * 100. **IRIS engagement rate is 3,1% which is considered a good value for LinkedIn[8].** The most successful posts

[8] Keyhole – LinkedIn Engagement Rate Calculator, available at: https://keyhole.co/blog/linkedin-engagement-rate

contributed to the engagement rate in particular, as theirs varied from 3% to 8%. These posts received more than 1.500 impressions but also more than 100 interactions; Figure 19 shows the most recent successful post as example. Most LinkedIn posts potentially received a few hundreds of impressions.

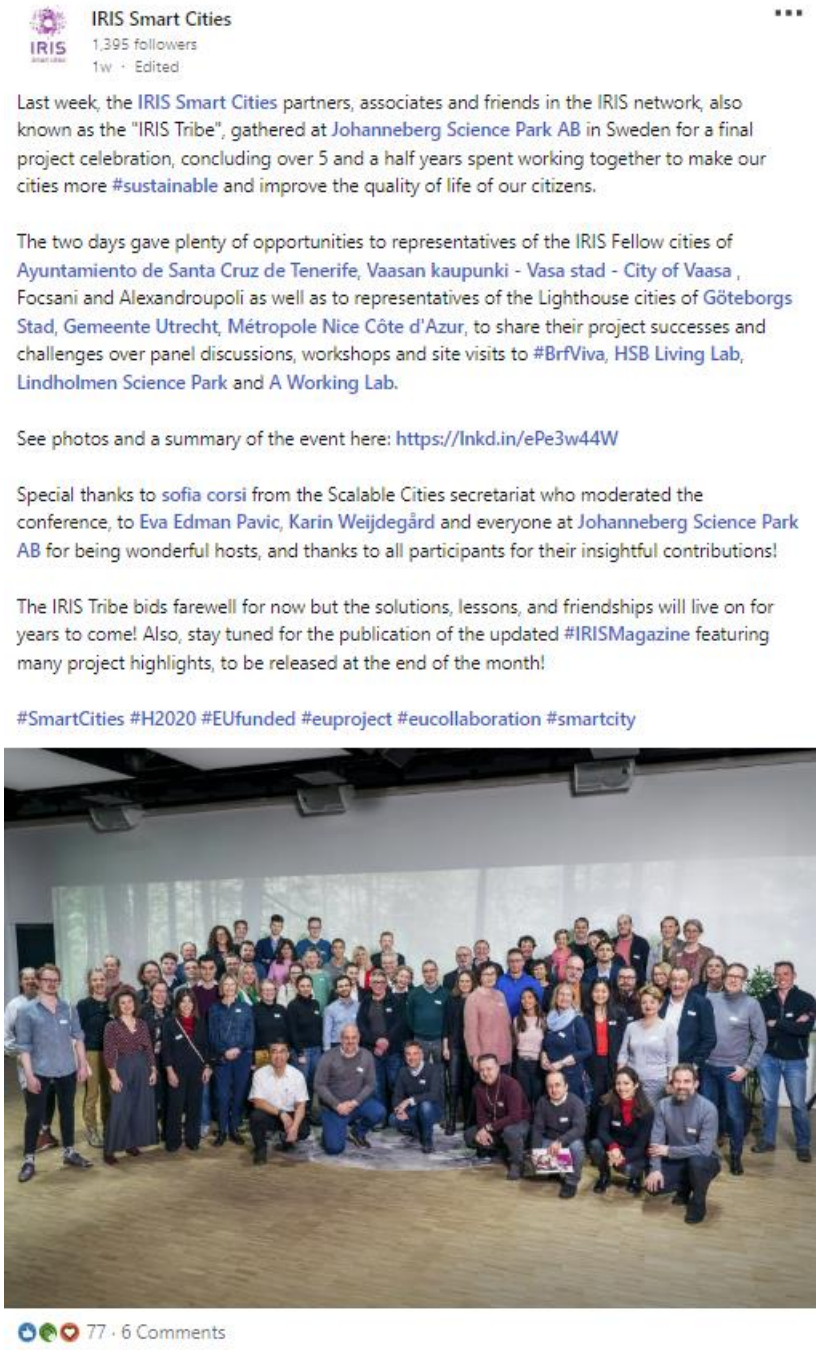


*Figure 19 IRIS LinkedIn most recent successful post*

Most IRIS LinkedIn followers are from Europe (92%), and in particular from IRIS partners' countries such as Sweden, the Netherlands and France (Table 11). Several followers are from the same location of two case studies; 76% of the followers from Sweden are specifically from Gothenburg, and 51% of the followers from France are from Nice. Only 1 follower is from Utrecht.

*Table 11 – Top 10 countries of IRIS LinkedIn followers*

| Country | Fans | |
|---|---|---|
| Sweden | 283 | 30% |
| Netherlands | 170 | 18% |
| France | 123 | 13% |
| Belgium | 51 | 5% |
| Spain | 35 | 4% |
| Germany | 34 | 4% |
| Italy | 31 | 3% |
| Greece | 21 | 2% |
| Finland | 19 | 2% |
| Portugal | 19 | 2% |

LinkedIn analytics allows to gather insights into the company size, job function, and industry of the followers. Most followers are from small (11-50 employees, 15%) to medium size companies (51-200 employees, 14%) or from big companies with 1001-5000 employees (14%). Around 11% of followers are from companies with more than 10.000 employees.

Regarding the followers' job function, two were slightly more popular than others: Business Development and Program and Project management. Figure 20 shows the top 10 job functions of the IRIS followers.

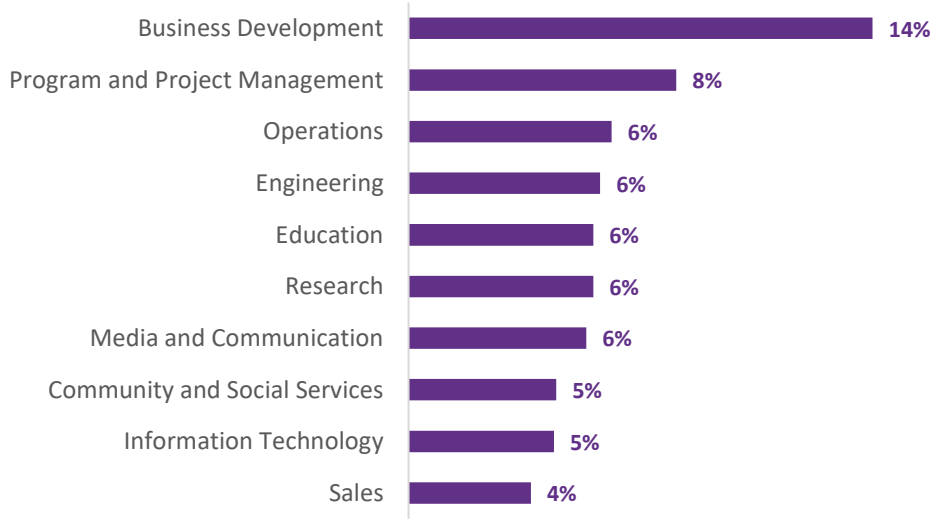


*Figure 20 Top job functions of IRIS LinkedIn account followers*

This is a positive outcome as the project wants to engage and inspire precisely these audiences to go on and develop new projects and technologies related to smart cities.

The IRIS followers come from 100 different categories of industry. Government Administration, Research Services and Higher Education are the top three industries from where followers are (Figure 21). This data reflects and confirms our chosen target groups and the nature of the project which is centred around research and innovation spearheaded by city municipalities

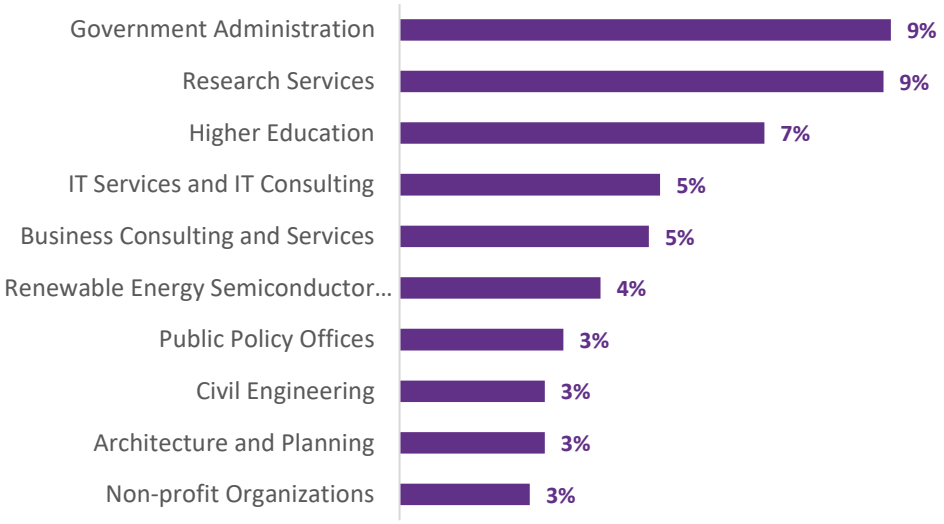


*Figure 21 Top company sizes of IRIS LinkedIn account followers*

## 3.5. YouTube Channel

YouTube is an online video-sharing platform, widely known and used by different type of audiences for many different purposes, from entertainment to professional and business related.

The IRIS project has its own account[9], used for publishing videos related to events, sharing knowledge and lessons learned, providing material for researchers and communicating the latest news and project results. It is the home of IRIS's video interview series #SmartCityVisions, where key members of the project and broader smart city influencers feature.

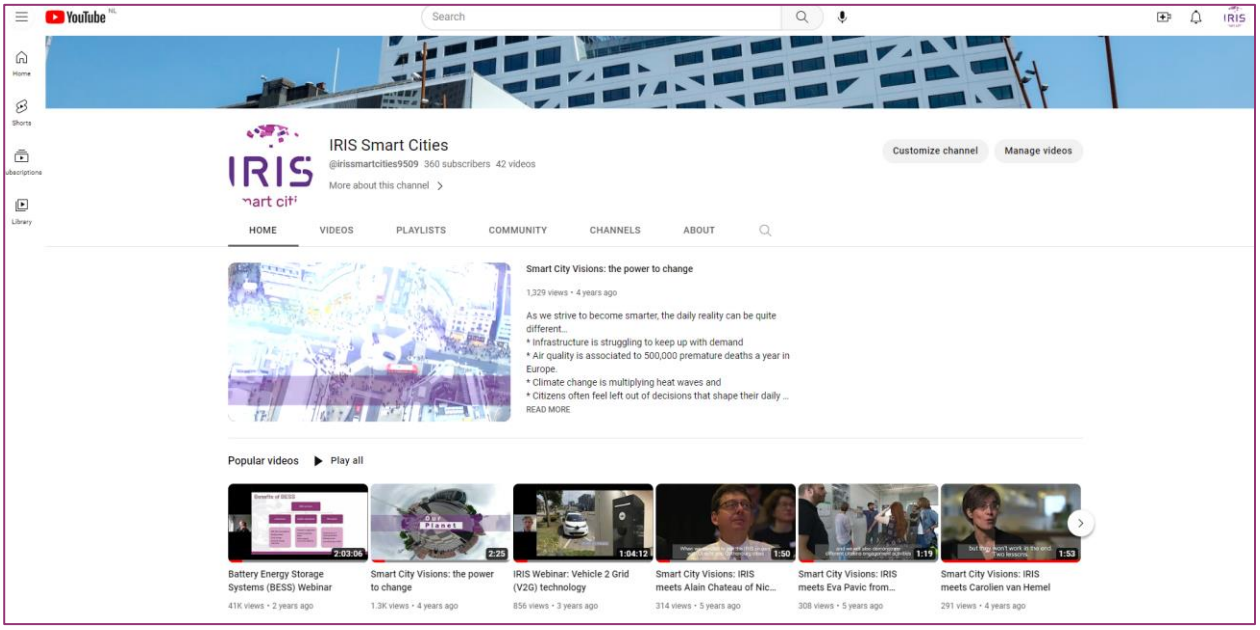


*Figure 22 IRIS YouTube account*

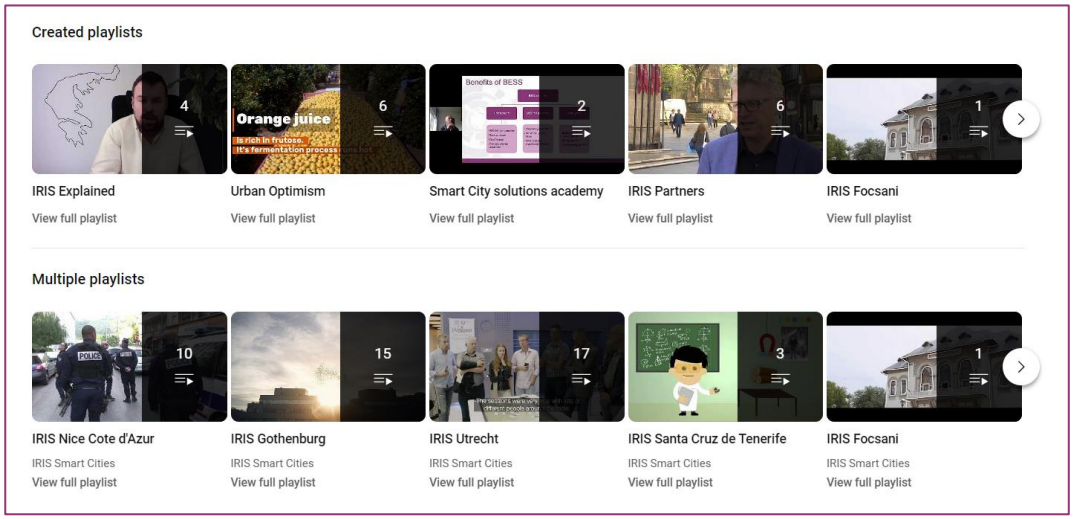


*Figure 23 IRIS YouTube playlists*

[9] https://www.youtube.com/channel/UCVZPWV3_lx4xF1aXItY9E8w

**IRIS YouTube channel was created in January 2018. Since then, 44 videos have been published.** Table 12 presents the main metrics of the IRIS activity in YouTube.

*Table 12 – Overview of the IRIS YouTube activity (1/1/2018 – 28/3/2023.)*

| Videos | Subscribers | Impressions | Views | Watch Time (hours) | Average View Duration (mm:ss) | Likes | Comments |
|---|---|---|---|---|---|---|---|
| 44 | 360 | 1.932.353 | 49.223 | 8.800 | 10:57 | 310 | 20 |

YouTube offers detailed statistics about the performance of each video.

| Content | Average percentage viewed | Views | Average view duration | Watch time (hours) |
|---|---|---|---|---|
| **Total** | **9.8%** | **48,112** | **10:57** | **8,784.4** |
| 2:03:06 Battery Energy Storage Systems (BESS) Webinar | 9.8% | 41,936 87.2% | 12:04 | 8,435.5 96.0% |
| 1:04:12 IRIS Webinar: Vehicle 2 Grid (V2G) technology | 10.8% | 855 1.8% | 6:55 | 98.6 1.1% |
| 1:30:40 IRIS Webinar: How can software support smart cities a... | 24.6% | 211 0.4% | 22:18 | 78.4 0.9% |
| 1:56:59 Smart City Business Models - how to boost sustainabl... | 5.0% | 285 0.6% | 5:49 | 27.7 0.3% |
| 2:25 Smart City Visions: the power to change | 48.7% | 1,329 2.8% | 1:10 | 26.1 0.3% |
| 1:20:11 IRIS Webinar: Developing & applying a successful Mobi... | 5.2% | 253 0.5% | 4:09 | 17.6 0.2% |
| 1:27:11 Iris webinar - Creating smart city business models | 8.0% | 150 0.3% | 7:00 | 17.5 0.2% |
| 1:29:45 IRIS Webinar on Urban Data Platforms | 3.5% | 278 0.6% | 3:09 | 14.7 0.2% |
| 1:16:01 IRIS Webinar: A Paradigmatic Shift in Citizen Engagem... | 6.0% | 174 0.4% | 4:32 | 13.2 0.2% |
| 1:01:50 City Innovation Platforms: applications in energy effici... | 4.9% | 177 0.4% | 2:59 | 8.8 0.1% |

*Figure 24 – IRIS YouTube videos metrics (top 10 videos by watch time)*

More than half of the viewers come from suggested YouTube videos (52%), while 18% of the viewers come from external sources (e.g. Google Search or embedded YouTube videos) and 11% come from YouTube search.

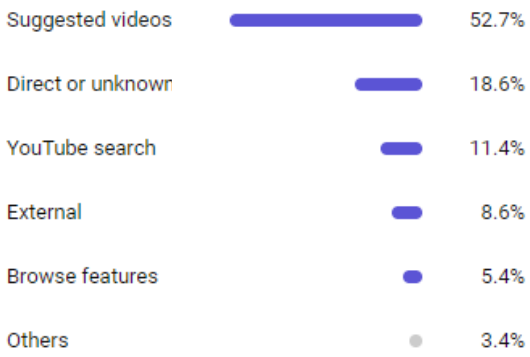


*Figure 25 – IRIS YouTube traffic source types*

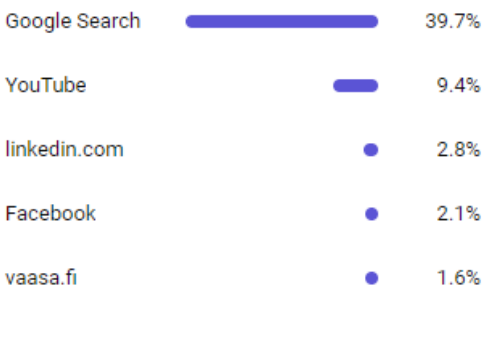


*Figure 26 – IRIS YouTube external traffic source types. The label YouTube stands for embedded videos played within the YouTube player.*

Unlike during the first 12 months of the project, most of the visitors don't come from countries where an IRIS partner exists. This trend already started at M30, and escalated over the years. At M66, the five top countries where visitors are from are the United States, India, United Kingdom, Indonesia, and South Korea (see Figure 27). This change in audience is not an issue, but an opportunity to reach new audiences.


*Figure 27 – IRIS YouTube top 5 countries source of traffic*

The playlists about the three lighthouse cities were the most viewed.

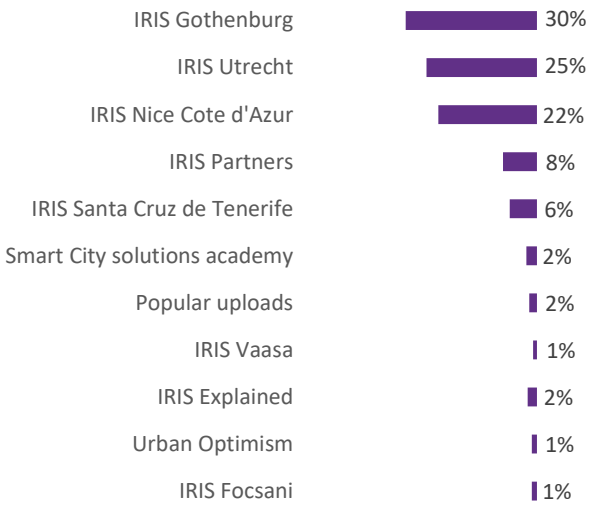


*Figure 28 - IRIS YouTube Playlist popularity*

## 3.6. SlideShare account

A SlideShare account gives an excellent organic search return and very international readership. In tandem with the IRIS LinkedIn account, it is a powerful tool for reaching professional dissemination targets and highly interested members of the public (Figure 29).

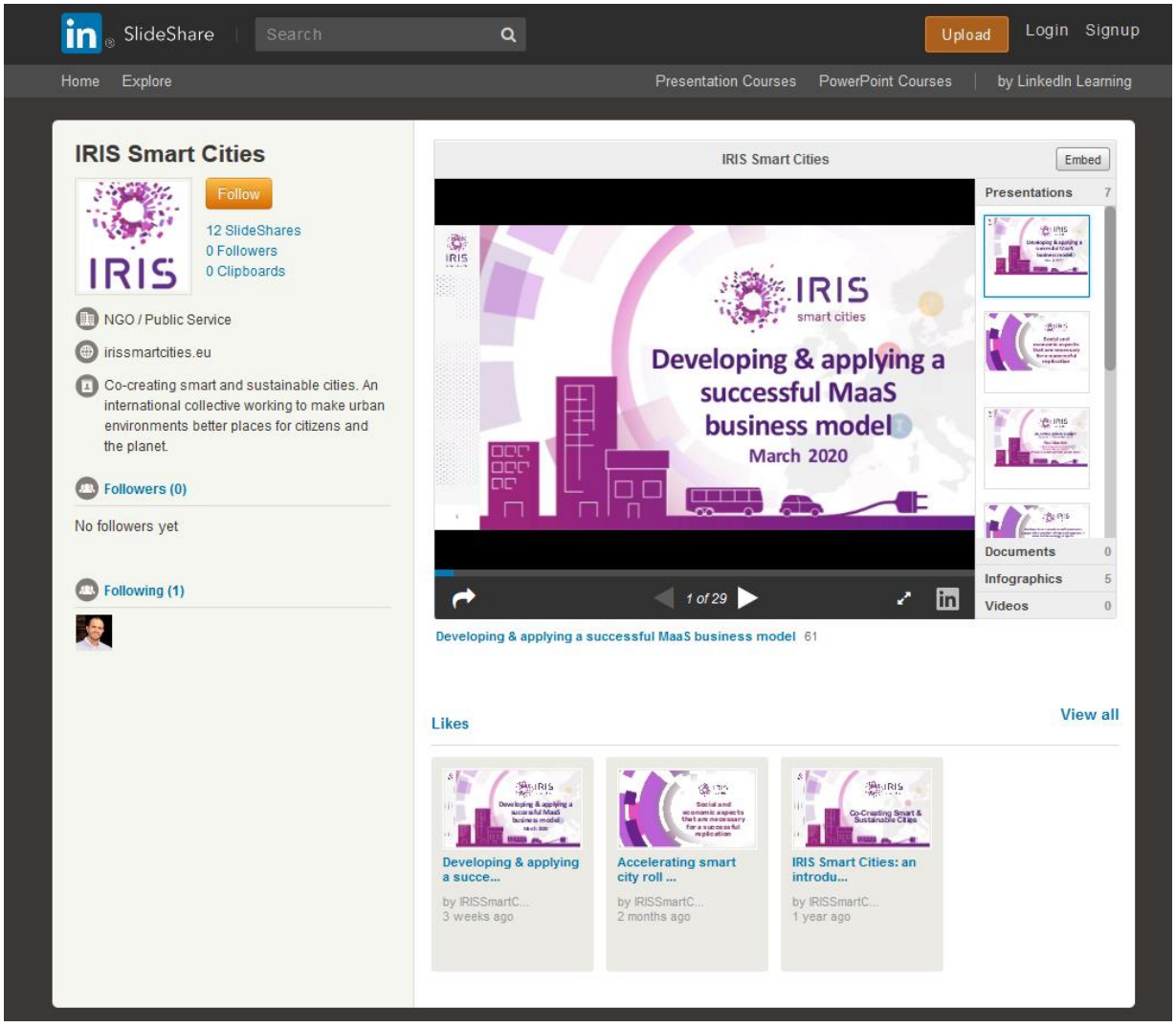


Figure 29 – IRIS SlideShare account

**IRIS has published 20 SlideShares that contain 15 presentations and 5 infographics (**Figure 30**). The published content has 55.874 views during the reporting period.**

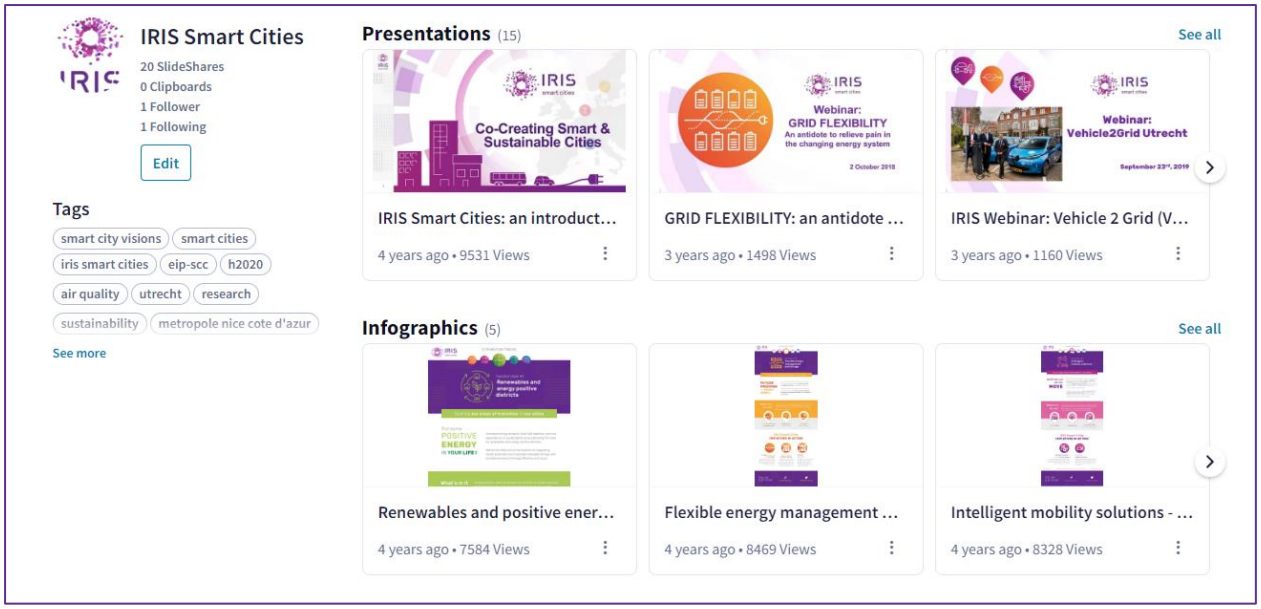


*Figure 30 – IRIS SlideShare files*

Among the IRIS publications, the infographics are particularly popular. However, the most viewed and downloaded document is an introductory presentation about the project, uploaded in November 2018 (Table 13).

*Table 13 – Overview of the IRIS SlideShare activity from November 2018 to March 2023.*

| Presentation | Views | Downloads | Favourites |
|---|---|---|---|
| **Total** | **55.874** | **76** | **10** |
| IRIS Smart Cities: an introduction to co-creating smart & sustainable cities | 9.517 | 18 | 3 |
| Infographic - Flexible energy management and storage - What's in it for me? | 8.469 | 0 | 1 |
| Infographic - Intelligent mobility solutions - What's in it for me? | 8.328 | 1 | 0 |
| Infographic - Citizen Engagement and co-creation - What's in it for me? | 8.155 | 1 | 1 |
| Infographic - Digital transformation and services - What's in it for me? | 8.117 | 4 | 0 |
| Infographic - Renewables and positive energy districts - What's in it for me? | 7.583 | 0 | 0 |
| GRID FLEXIBILITY: an antidote to relieve pain in a changing energy system | 1.498 | 1 | 0 |
| IRIS Webinar: Vehicle 2 Grid (V2G) technology | 1.154 | 13 | 1 |
| Vehicle to Grid ecosystem at scale: Utrecht case study | 461 | 9 | 0 |
| Developing & applying a successful MaaS business model | 388 | 7 | 1 |
| IRIS Webinar: How can software support smart cities and energy projects? | 363 | 8 | 1 |

| | | | |
|---|---|---|---|
| A PARADIGMATIC SHIFT in CITIZEN ENGAGEMENT | 352 | 2 | 1 |
| City Innovation Platforms: applications in energy efficiency and environmental risk | 279 | 3 | 0 |
| Gothenburg: a leading smart city - IRIS case study | 269 | 0 | 0 |
| Iris webinar - Creating smart city business models v4.ppt | 237 | 2 | 0 |
| Nice Cote d'Azur: a leading smart city - IRIS case study | 187 | 2 | 0 |
| Utrecht: a leading smart city - IRIS case study | 184 | 3 | 0 |
| IRIS Webinar Urban Data Platforms | 183 | 0 | 0 |
| Accelerating smart city roll out: blending social & economic factors to boost replication | 87 | 0 | 1 |
| EU-China Urban Summit: pathways to urban innovation | 63 | 2 | 0 |

## 3.7. ResearchGate Project Page

ResearchGate is a professional network for scientists and researchers. Over 17 million members from all over the world use it to share, discover, and discuss research[10]. The platform's mission is to connect the world of science and make research open to all.

Many researchers from the IRIS partners have accounts to ReseachGate and publish their academic papers. The IRIS ResearchGate project page[11] aims to use the connections of these researchers to promote the project's academic publications (Figure 31).

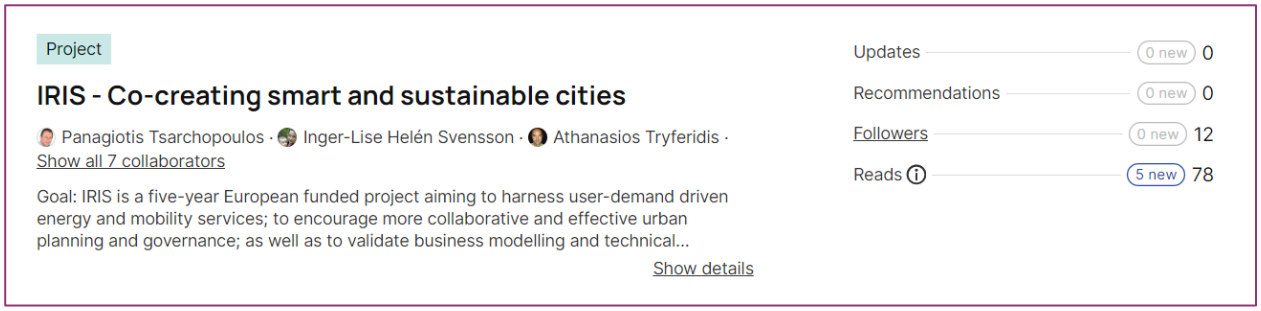


*Figure 31 IRIS Project Page on ResearchGate*

Table 14 presents the main metrics of the IRIS activity in ResearchGate.

*Table 14 – Overview of IRIS ResearchGate activity (1/6/2019 – 31/3/2023.)*

| Publications | Collaborators | Followers | Reads |
|---|---|---|---|
| 2 | 7 | 12 | 78 |

[10] About ResearchGate https://www.researchgate.net/about
[11] https://www.researchgate.net/project/IRIS-Co-creating-smart-and-sustainable-cities

## 3.7 Instagram account

Instagram is a dominant picture-sharing platform that increasingly allows people and organisations the possibility to develop visual and editorial content. The development of the 'stories' features an ability to establish a project personality among new demographics and audiences. A key content thread on Instagram will be to profile the 'humans behind' smart cities: the technicians and academics, but also businesses, communities and residents of IRIS.

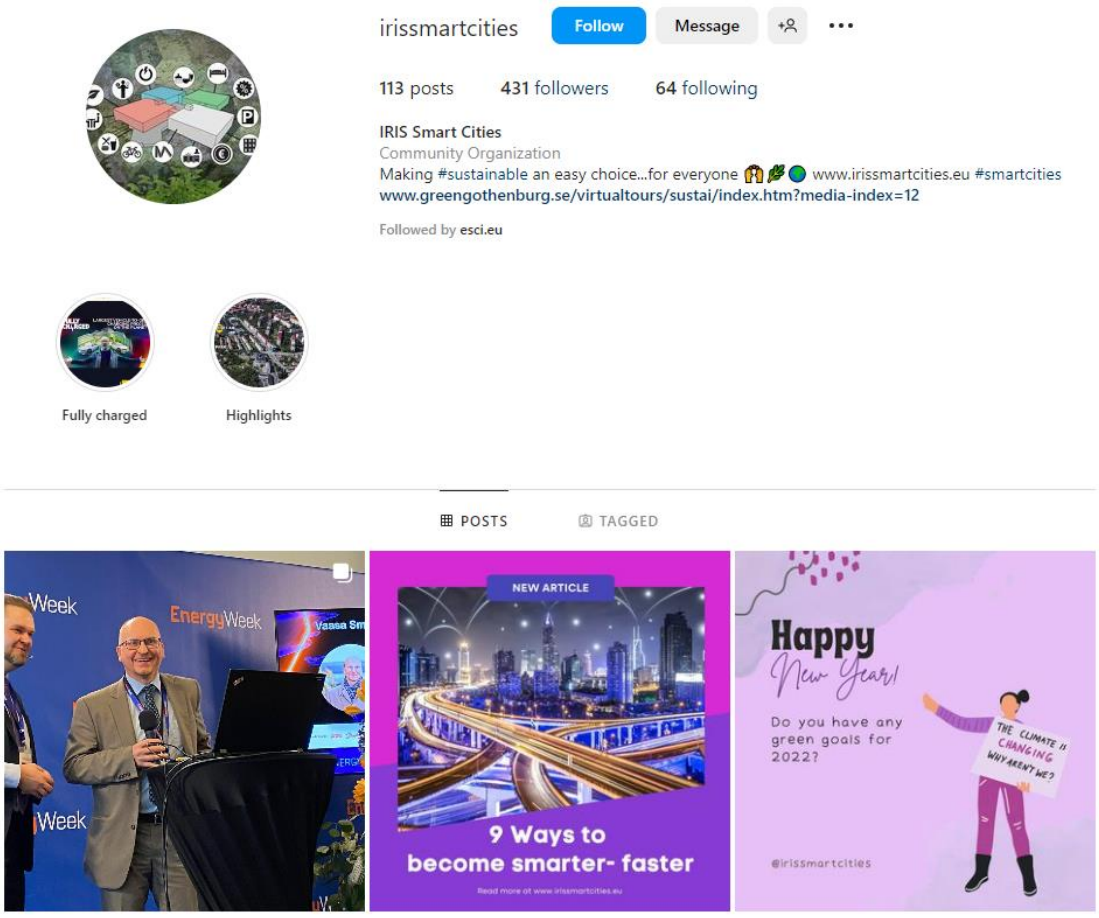


Figure 32 IRIS Instagram account

**IRIS Instagram account[12] has 431 followers until 30 March 2023. 106 posts have been published which have received more than 4.600 impressions and 1.104 likes.** Most of the Instagram followers come from Europe (58%), and in particular from IRIS partners' countries such as Sweden and the Netherlands. However, the account also gathered interests from unexpected global enthusiasts for smart city issues, in particular from South America (19% of fans) and Asia (14% of fans).

[12] https://www.instagram.com/irissmartcities/

# 4. Conclusions - Recommendations

Based on a solid Communication and Dissemination (C&D) strategy, the IRIS project has built a strong online presence. The project's website, used as a 'digital anchor' for IRIS content, is the main pillar of the C&D strategy. The IRIS website had 58.259 sessions while its accompanying showcase site gathered 1376 sessions. IRIS was also active in Twitter, LinkedIn, YouTube, SlideShare, ResearchGate and Instagram. The project used the unique characteristics and audiences of each platform to better distribute specific content and connect with influencers. Twitter and LinkedIn were the flagship platforms in social media. On Twitter, the @IRISsmartcities account has 1.376 followers and 800.000 impressions, while on LinkedIn the IRIS page has 1.395 followers and 127.354 impression. Hence the project expanded its online presence not only on Twitter but on LinkedIn too. While Twitter is good to spread news, LinkedIn is great to establish professional connections. Apart from these two platforms, IRIS is also popular on YouTube, with 44.223 video views of interviews and webinars; and on SlideShare, with 55.874 views of presentations and infographics.

The project used a variety of online tools to monitor and evaluate its online activities. The analysis of monitoring data collected from the website and social media accounts shows that, during the first half of the project, IRIS published online a significant amount of content (deliverables, video, visuals, social media updates, journalistic articles, citizen journalism and news releases), which is widely accepted by the users.

The IRIS project achieved its C&D goals for the project, as it managed to establish its presence in the field of smart and sustainable cities (be visible) and to exploit the achieved results so far by distributing more editorials, articles and deliverables (be credible). It has also managed to be become a source of knowledge and inspiration (be influential) in the field of smart and sustainable cities thanks to the delivery of project results. Lighthouse cities achievements, online and offline tools, best practices, solution factsheets, academic publications, webinars, the replication roadmap and replication plans constituted a rich pull of resources for communication and dissemination. IRIS always reached the right target countries. Sweden and the Netherlands more than others. Only on YouTube IRIS' public is different revealing some potential to expand IRIS expertise beyond Europe, particularly in Asia.

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