



TECHNICAL REPORT NIJMEGEN EGC2018



Nijmegen

Municipality of Nijmegen
Nijmegen | June 2019



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Chapter 1 Introduction

This chapter will encompass the structure of this report, a reading guide, an introduction to Nijmegen and the partners.

1.1 Structure one-year report

In this technical report you will find a concise evaluation of the European Green Capital 2018 (EGC2018). The technical report and the magazine together form the one-year report. The EGC magazine is an extensive popular-style report on the EGC2018, and this report will often refer to the magazine for further clarification. Additionally, this technical report will refer to governmental publications, the city monitor and EGC websites encompassing the visual year overview and the EGC2018 challenges website. The visual year overview contains various images and movies of all activities during the EGC2018 year, and the EGC challenges website shows an overview of the majority of resident-initiated projects.

1.2 Reading guide

Chapter 1: Introduction and reading guide.

This chapter will show the structure of this report, an introduction to the city, the preparation of the awards and the main partners involved.

- The structure of the one-year report
- This reading guide
- An introduction to the city of Nijmegen
- The preparation for becoming EGC2018 will be described
- The main partners will be mentioned

Chapter 2: Structure of the Nijmegen EGC2018 program.

This chapter will describe how EGC2018 was structured in Nijmegen

- The main activities in the EGC2018
- The five themes that were central in 2018 were: vibrant city, sustainable mobility, energy transition, circular economy and climate adaptation.

Chapter 3: Highlights and results.

This chapter will describe the highlights of the year, the direct quantitative results of EGC2018 and the indirect qualitative effects per theme of Nijmegen EGC2018.

- The main highlights of the year
- The summary of the main results
- The effects per theme

1. Energy transition

The effects of EGC on the theme “energy transition” will be discussed in terms of gas-free neighbourhoods, cooperation, networks, leadership by example (hospital example).

2. Vibrant city

The effects of EGC on the theme “vibrant city” will be discussed in terms of governance, economy, events, air quality (Declaration of Nijmegen), biodiversity, agroforestry, tourism, residents and publicity and awareness.

3. Circular economy

The effects of EGC on the theme of the “circular economy” will be discussed in terms of governance & city management, waste, events, business opportunities, network & awareness and behavioural change.

4. Climate adaptation & water

The effects of EGC on the theme “climate adaptation & water” will be discussed in terms of publicity campaign “Operatie Steenbreek” (Operation Breaking Stones) and the river park – the Spiegelwaal.

5. Sustainable mobility

The effects of EGC on the theme “sustainable mobility” will be discussed in terms of inland shipping, biking, electric transport, European Mobility Week and external opportunities.

6. General effects

The general effects will show effects of EGC2018 that have not been mentioned in the themes above. These are subdivided into: residents, social sustainability, schools and students, surroundings and hospitality.

Chapter 4: Communication and publicity

This chapter will describe the communication and publicity quantitatively as well as qualitatively.

Chapter 5: Hospitality

This chapter will describe the (professional) visits to Nijmegen during EGC2018.

Chapter 6: Lessons learned & future plans

This chapter will describe the lessons we have learned from being EGC2018 and what our future plans are after 2018.

Chapter 7: Financial overview

This chapter will show a financial overview of EGC2018.

1.3 Introduction to Nijmegen

The location at the river Waal, between hills, polders and forests, has made Nijmegen an attractive place for more than 2,000 years. The location of the lateral moraine and river gives Nijmegen its unique charm and makes the city the ideal operating base for walks and cycling trips in the wonderful region. In ten minutes, you can walk from the centre to the idyllic Ooijpolder, which was rightly protected against urban growth in the 1960s.

As the Netherland’s oldest city, Nijmegen cherishes its history, while also realising that a sustainable future for its inhabitants is at least as important. From a city where living, working and recreational areas were separated, working areas are today being transformed into modern residential areas. Nijmegen is a growing city, with more than 175,000 inhabitants and a population density of 3,000 inhabitants/km². With Radboud University and HAN University of Applied Sciences, Nijmegen educates 40,000 students which is very important for a youthful, modern culture in the city.

Additionally, Nijmegen is known for health & innovation. We have organised many national running competitions, but Nijmegen has also welcomed Giro d’Italia, special Olympics and the Velocity international cycling conference. Nijmegen also welcomes 1.5 million visitors every year in July for the Four Days Marches festivities. In addition, we host several pop concerts, a buzzing music scene, a versatile film culture and we love to share our cultural history and environmental education. ¹

Due to climate change, the risk of flooding is increasing in Nijmegen. A national plan has been developed to give the rivers more space. The State mandated the creation of a four-kilometre secondary channel in Nijmegen. The city took this opportunity to realise unique feature: an island in the middle of the

¹ http://ec.europa.eu/environment/europeangreencapital/wp-content/uploads/2016/12/Introduction_Nijmegen-2018.pdf

city, and an artery through the city for the river's wildlife; an area which was also opened for cyclists and pedestrians from the city centre and from the region.

1.4 The awarding: Nijmegen EGC2018

In 2013, Nijmegen ranked highest in the national benchmark for sustainable policies. This generated interest in looking into the international benchmark for sustainable cities, governance and municipalities. After analyses, we found that the European Green Capital (EGC) was the most prestigious, comprehensive and anchored international benchmark. In 2014 we chose to apply for ECC2016. In our third attempt in 2016, we were awarded EGC2018. How the process evolved after that can be read in the magazine (pp. 6-7).

Jury report

In the Jury report, Nijmegen's presentation was described as ambitious, well-structured with concrete ideas to fulfil the task of being the EGC2018. They were also impressed with the high involvement of residents, strong cycling infrastructure, traffic organisation, and clean public transport, as well as the excellent approach to waste management (Jury Report, 2016). The full report can be found in appendix 4.

1.5 Partners

The EGC2018 has been made possible by several parties. The European Union initiated the European Green Capital competition and provided Nijmegen with the opportunity to win EGC2018. We are very grateful for this opportunity and were able to inspire and to be inspired by many of our fellow Europeans (Magazine EGC2018, p. 46). The municipality of Nijmegen has set up a project bureau to put the Nijmegen EGC2018 program into effect.

Over the year, we were supported by the municipality of Nijmegen, the province of Gelderland, Rabobank, ENGIE, NUON/Vattenfall, ARN BV, Alliander, Royal HaskoningDHV, Dirkzwager advocaten & notarissen, USG MarCom and Cornelissen group. In addition, Radboud University, RadboudUMC, HAN University of Applied Sciences, the ROC, ARN and DAR had a major input in this year. All of our supporting partners can be found in the magazine (p. 82).

Chapter 2: Structure of Nijmegen EGC2018

The municipality established a project group to direct the Nijmegen EGC2018 program and generate support for the EGC2018 goals. All the project managers in this group have been interviewed to share their knowledge (the magazine and appendix 6). The project group organised several activities together with partners, the European Union and residents. These activities can be separated in events, challenges and work visits. In order to involve a broad scope of stakeholders, events varied from: (a) formal events, (b) events for professionals, (c) events for a public audience and (d) cultural side-programme. However, not all activities were directly organised by the Nijmegen EGC2018 project office; residents and partners organised most events. The events were divided into 5 themes (topics) that will be further discussed in chapter 2.2. An overview of all events and visitor numbers can be found in appendix 1. An overview of the green capital challenges (resident initiatives) can be found on the challenges website².

2.1 Activities EGC2018

The Green Capital Challenges project driver for sustainable events found that events started a gradual "greening" process in 2017 as a preparation for EGC2018. Existing events took the first steps towards sustainability in 2018 through sustainable energy, vegetarian food and more efficient waste management. In 2019 several events had the right support to take a leap into sustainability. Examples of this are 100% vegetarian catering (backstage and front stage) and a smarter & 'greener' energy use. Additionally, events carried out a pilot with a coin system for cups; making it costly to lose your cup and simultaneously not beneficial to collect plastic cups. All 26 existing big and medium events in Nijmegen signed the sustainable manifesto, in which they pledged to make events more sustainable now and in the future.

"I've been passionately working on making events more sustainable since 2011. It demands quite some effort to get events to collaborate and make sustainability a priority. Nijmegen EGC2018 made it easier to get all events together and sign the manifesto. This manifesto was only the beginning of the many sustainable improvements made in 2018 and still to come in the near future. I'm proud to say that events in 2019 have already significantly transcended the sustainable improvements of 2018."

– Bert Lagerweij, driver sustainable challenges Green Capital Challenges 2018.

A) Examples of formal events organised by the project group, the municipality & the European Union. These events were organised for both professional and public audiences.

- **Opening festival, the miracle garden (Wondertuin) – 19-21 January 2018.**

This 3-day opening event focussed on both professionals as a more generic crowd. This event consisted of an opening show, a fair, workshops, lectures, talk show, music performances, networking opportunities and a closing party. The event attracted 11,000 participants from all ages and backgrounds. The effects that this event generated can be found in the magazine (p. 76). Further visual support of this event can be found in the visual year overview (Visual year overview, 2019)³.

- **Presentation ceremony (part of the opening festival) – 20 January 2018.**

Euro Commissioner Vella presented the Green Capital Award from Essen (Mayor Kufen) to Nijmegen

² <https://www.greencapitalchallenges.nl>

³ <https://jaaroverzicht.greencapital2018.nl/en>

(Mayor Bruls), officially opening the Green Capital year. The ceremony was attended by 600 mostly professional visitors and live-streamed to many more.

- **The Green Capital week⁴**

The Green Capital week was a week entirely dedicated to European Green Capital 2018, focussed around the award ceremony for EGC 2020 and European Green Leaf 2019. The main events of this week are summarised below.

Spiegelwaal concert (river concert) – 20 June 2018.

A classical concert on the side channel of the river the Waal. With the city's skyline in the background, this concert sold out all 3,000 tickets within minutes. Several international guests were invited to attend this concert. The effects that this event generated can be found in the magazine (p. 76). Further (visual) support can be found in the magazine (p.24).

Triple helix symposium "Follow the green track" – 21 June 2018.

This event is a popular scientific symposium for the triple helix of foreign delegations and the Dutch network. The symposium was attended by 100 professionals. It concerned a participatory symposium for city delegations, business stakeholders and academics on the power of sustainable cities and the importance of networking with stakeholders. Representatives of the EU, former Green Capitals and candidates for the European Green Capital award 2020 attended the symposium programme.

Awards ceremony – 21 June 2018.

During the Awards Ceremony Gala Dinner, the European Green Capital 2020 and the European Green Leaf Award 2019 were presented. This event attracted 170 professionals. The Ceremony was combined with music and short presentations. The Awards Ceremony Gala Dinner is was attended by jury members, EGC/EGL Expert Panel, European Green Capital and European Green Leaf finalist cities, European Commission officials, representatives from the city of Nijmegen, Member States, as well as previous finalist and winning cities.

- **The king's visit - 4 July 2019**

In July, the Dutch king, Willem-Alexander visited Nijmegen. We were able to show him the many sustainable initiatives Nijmegen has to offer (Magazine EGC2018, p. 60).

- **European Mobility Week (and the picnic) – 16-22 September 2018.**

To start mobility week in Nijmegen, we served a free picnic on our main river bridge (de Waalbrug). This bridge, which daily provides entrance to Nijmegen for 50,000 cars, was shut down for 24 hours. The entire car-free Sunday attracted approximately 6,000 visitors (Appendix 1). The effects that this event generated can be found in the magazine (p. 76). Further visual support can be found in the visual year overview and the magazine (p. 66 -74)

⁴ <https://greencapital2018.nl/greenweek/>

- **The Mayor's Conference (Call for action) - 23 November 2018.**

This event attracted 90 professionals from 22 countries. During the Mayor's Conference, more than 22 cities and 4 partners from the European Capital Network signed the Call for Action, a pledge to enhance sustainability in all cities around the world. The Call for Action seeks to inspire and to call upon cities to recognize and act on their role as drivers of sustainable development. The cities also offer to help other cities in their efforts to give sustainability a boost in their own city with bottom-up initiatives. During the global climate change conference #COP24 in Katowice, representatives from the European Green Capitals Network called upon national governments and international institutions to acknowledge the important role of cities and involve them early on in the process of developing policies. More information can be found on the EGC2018 - call for action website ⁵. The effects that this event generated can be found in the magazine (p. 76).

- **Closing event on Green - Friday 14 December 2018.**

The closing event attracted 1,500 volunteers and visitors and resulted in a cleaner city. It closed with a prestigious end-celebration with a lightshow. The day consisted of volunteer actions like cleaning beaches and parks, planting trees and quizzes. In the afternoon the city centre held a big lightshow (Glow Green), a movie premiere and several other festivities. More information can be found in the visual year overview.

B) Examples of events organised by partners for professionals:

- **The European Agroforestry Federation congress (EURAF) – 28-31 May 2018.**

This event attracted 200 professionals. The European Agroforestry Federation congress was held to accelerate inspiring transitions towards agro-forestry as sustainable land use, including the role that agro-forestry has to play in fighting climate change.⁶ Organising partners were the 'Van Akker naar Bos' Foundation, in cooperation with Louis Bolks Foundation, 'Duinboeren' Foundation and the municipality of Nijmegen. This event was organised in close cooperation with the management of EURAF.

- **Ports and the City (international seminar) – 10 June 2018.**

This event attracted 335 professionals. As a result of Ports and the City, the 'Declaration of Nijmegen' was signed by a lead group of 20 parties who committed to accelerating the greening of the inland shipping sector. The ultimate aim in the Declaration of Nijmegen is to have a climate-neutral inland shipping sector by 2050. The authorities and businesses that signed promised to do everything in their power to reduce CO2 emissions in inland shipping by 20 percent by 2030. Organising partners were Nijmegen EGC2018, the Smart and Healthy City programme of the Dutch Ministry of Infrastructure and Water Management. In June 2019 this declaration had a sequel in the Netherlands called the Greendeal, with all national sectors involved in the shipping industry.⁷ More information can be found in the magazine (p. 68).

- **EcoProcura – 3-5 October 2018.**

This is a three-day international conference on sustainable, strategic, circular and innovation procurement. The conference brought together 400 public procurers and stakeholders from across Europe and the world, inspiring and motivating them to grasp all the opportunities available to buy better.⁸ Organising partners were ICLEI & Nijmegen EGC.

- **CleanMed – 10-12 October 2018.**

This multiple-day event attracted 350 specialists from all over the world gathered together to discuss problems best practices, ideas and the newest developments on sustainable healthcare. Organising partners were Radboudumc, CleanMed and MVO network healthcare.⁹

⁵ <https://greencapital2018.nl/en/callforaction/>.

⁶ https://euraf.isa.utl.pt/conferences/IVEURAFConference_2018_nijmegen

⁷ <https://www.portsandthecity.nl/>

⁸ <http://www.ecoprocura.eu/news-information/news/>

⁹ <http://2018.cleanmedeurope.org/>

- **ENAS (European Network of Academic Sports Services) - 11-16 November 2018.**

This event attracting 150 professionals is an annual gathering of university sport centres held in Nijmegen. The congress addressed sustainability in sports.

- **RREUSE - 22 – 23 November 2018.¹⁰**

This event attracted 250 professionals. RREUSE's second international conference, tackled how to make re-use a natural and convenient choice for consumers and encourage public, private and social enterprises to collaborate closely in the field.¹¹

C) Examples of events organised by motivated residents for a public audience:

- **Tango Festival - 26 August 2018 (part of the cultural side-programme).**

This festival attracted 80 visitors. The Tango Festival has existed for 16 years and made the entire event sustainable due to Nijmegen EGC2018. The event ran on green electricity, combatted waste and took place in a park. More information can be found in the magazine (p. 39).

- **NK waterfietsen (Dutch championship pedal boating) – 12 May 2018 (part of the cultural side-programme).**

As a side event to the recreational cycling event around Nijmegen, the pedal boat games were organised. Kids and adults participated in this event. The entire event ran on a green battery charged by wind turbines and attracted 1,050 visitors.¹²

Events in 2019:

- **The green 'master test' (De groene meesterproef) – 7 February 2019**

The 'meesterproef' focussed on professional orientation for teenagers. With a focus on the question: "How can I contribute to a sustainable earth now and in the future, and, what skills do I need in order to do so?". This event was organised for 650 school pupils between 12 – 14 years old.

- **Symposium creating legacy – 21 February 2019**

This event focussed on the lessons learned of Nijmegen EGC2018 and similar programs, including Leeuwarden-Fryslan European Capital of Culture 2018. There were inspirational speakers, workshops and opportunities to network and exchange ideas and experiences. This event informed and inspired event professionals with respect to the opportunities major events and programs like Nijmegen EGC2018 can create and the legacy they can have.

- **Meet-up food, logistics & sustainability - 23 January 2019**

This business meet-up focussed on knowledge exchange on sustainable agro & food logistics. It also aimed to get input on the current economic vision of the municipality of Nijmegen. This meet-up was supported by 6 external speakers and organised by the municipality of Nijmegen, Cornelissen Transport and the EGC2018 project team. The event was attended by 65 professionals working in the agro & food sector, logistics, the Municipality of Nijmegen and the Province of Gelderland.

D) Challenges and the Green vibe

The Nijmegen EGC Green Vibe was widely spread throughout Nijmegen. Many residents were actively involved through events and Challenges. The Green Capital Challenges were born right after the Award Ceremony in Ljubljana, where a group of Nijmegen residents decided to create Challenges to involve more

¹⁰ <https://www.rreuse.org/making-re-use-mainstream-by-getting-everyone-on-board/>

¹² <https://greencapital2018.nl/kalender/>

residents in the subject of sustainability. During the Green Capital year, several side projects and parties were organized by residents and spread around Nijmegen. We called this the Green Vibe (Magazine p. 45).

Challenges

The Foundation Green Capital Challenges (former Foundation sustainable relay ride) supported the municipality in winning the title of Nijmegen EGC2018. The goal of this foundation was to spread the word on the Nijmegen EGC2018 award and to motivate residents to participate actively. Residents were able to participate by joining or promoting challenges. During Nijmegen EGC2018, 13 challenge themes were addressed, one for every month (+ January 2019). Every challenge had a theme-driver and a team of involved stakeholders & interested residents. These challenges were mostly carried out by involved residents. The challenges were: circular economy, waste, biodiversity, mobility, sustainable events, sustainable energy generation, healthcare and exercise, water, power-saving, food, fair trade, social sustainability and green money. The results of all the challenges can be found in the magazine on page 57.

The Challenges Foundation also launched the sustainable relay baton (Picture 1). The relay baton is a physical wooden object passed from one sustainable project in Nijmegen to another. The concept of a relay baton was passed to the province of Gelderland, being passed on to the entire province. In addition, the relay baton received an international character as Nijmegen asked Essen to put all its stories into the relay baton. Nijmegen added its own stories and passed the relay baton to Oslo.



Picture 1 - Relay baton

2.2 Themes and indicators

The EGC competition takes in 12 environmental indicators: Climate change: mitigation and adaptation, sustainable urban mobility, sustainable land use, nature and biodiversity, air quality, noise, waste, water, green growth and eco-innovation, energy performance and governance. The EGC Award is an award for all residents and partners. We have translated the 12 indicators provided by the EGC competition into five themes that are comprehensible and accessible for all stakeholders involved. 13 These five themes are described below.

1. Energy transition

We can draw a great deal of energy from the sun and wind. That is smart and necessary. We are transitioning to a new system of sustainable energy. Nijmegen wants to be energy-neutral by 2045. But earlier is fine too!

2. Vibrant city

A green city is a healthy and clean city, with people that live together in harmony. We already have a beautiful green environment. And we are going to do even more to keep Nijmegen healthy and liveable.

3. Circular economy

The circular economy is about using and reusing all materials in the product chain. One person's waste is another person's raw material. Our motto: there is no such thing as waste.

4. Climate adaptation

The fact that the temperature is rising has many significant consequences. Since the Waal overflows more often, we have relocated the Lentse Waaldijk and created the Spiegelwaal. Together with other cities, we are looking at how we can give the river more space and make greater use of rainwater.

13 <https://greencapital2018.nl/en/green-initiatives/>

5. Sustainable mobility

In Nijmegen, we feel it is important that people can easily get from A to B. And that the air in and around Nijmegen stays healthy and fresh. It is not without reason that in 2017, Nijmegen was considered the bicycle city of the Netherlands! Together, we provide a smart, sustainable, and clean transport network, for now and for the future.

Social sustainability was interwoven in all five themes. Everybody should be able to contribute to the EGC program. We have striven to engage a broad scope of residents, organisations and professionals. Fortunately, we found that, on several occasions, social sustainability benefited as a result of several of the above-mentioned themes. For instance, the network “Kleurrijk Groen” launched a movement to involve people from various cultural communities in sustainability and nature. Another example is the involvement of students from various ages and educational levels who supported Nijmegen EGC2018 actively.

Chapter 3: Highlights & results

The best highlight, that cannot be grasped in one sentence, is the energy and engagement of so many organisations, professionals and residents. In the text below there will be a description of general highlights, the programme-specific highlights and the highlights of international seminars. The results will be presented in the infographic, the visual year overview and the magazine.

3.1 General highlights

Nijmegen EGC2018 was full of highlights which are all briefly mentioned in our infographic (appendix 5). We hosted over 200 events where we focussed on (international) professionals and a broader audience. The events varied from small seminars and lectures to big festivals and congresses. More data supporting the results of our events can be found in appendix 1.

- We held over 200 small and big congresses, lectures and festivals.
- We were able to receive a total of 71,000 visitors to the Green Capital Events. The organisers of all events provided us the visitor numbers per event (Appendix 1).
- We welcomed over 14,000 professionals as the Nijmegen EGC2018 program had a strong international character. (Appendix 1).
- During the year we held five major public events in various parts of the city as can also be found the calendar of Nijmegen EGC2018. 15
- Our volunteers counted 16,000 visits to our visitors' centre. This centre is called the pavilion and will be further described in chapter 4.
- Nijmegen EGC2018 had over 20,000 different social media mentions (Clip-it report).

3.2 Results

During Nijmegen EGC2018, we were able to achieve tangible successes, including enhanced cooperation and the launch of sustainable initiatives. We attracted many visitors and reached a large audience through the media. All the results can be viewed in the infographic and the magazine. In this chapter, the results will be presented in terms of: tangible and practical results, collaborative results, sustainable successes, visitors, entrepreneurship, tourism & congresses, publicity & opinion polls and residents' involvement. The external reports will be then summarised.

The most practical and tangible results were:

- Built 243 circular bus stops and 10 eco lounges, which will be further discussed in chapter 3.3.4 on the effects of ECG on the circular economy and can be found in the magazine (p. 31),
- Replaced 190,000 paving stones with a plant or tree and planted 10,000 trees. This was initiated by a campaign called 'Operation Breaking Stones'. More information can be found in chapter 3.3.5 on the effects of ECG on climate adaptation and water. Additional information can be found in the magazine (p. 52) and the visual year overview. More than 30 schoolyards 'went green'.
- Certification of seven eco schools, including one campus. More information can be found in the magazine (p. 41) and in the visual year overview.
- Observed an increase of 10% on the main cycling infrastructure. More on this can be found in chapter 3.3.2 on the effects of ECG on sustainable mobility.
- Over 1,000 visits to the role model circular house. More on this can be found in chapter 3.3.4 on the effects of ECG on the circular economy and in the magazine (p. 31), the visual year overview and the challenges website¹⁶.
- Brewed 5,000 bottles of beer made from rainwater.
- Received 1,000 people on our main bridge to share a sustainable picnic during European Mobility Week. More information can be found in chapter 3.3.2 on the effects of ECG on sustainable mobility and the magazine (p. 24).

15 <https://greencapital2018.nl/kalender/>

16 <https://www.greencapitalchallenges.nl/diensteneconomie-in-modelwoning/>

- Over 2,000 visitors to the sustainability cafés. More information can be found in the magazine (pp. 56-57).

The collaborative results were:

- Over 200 organisations signed our manifesto to contribute to a sustainable city in, and after, 2018. More information can be found in the magazine (p. 83) and the infographic.
- There were 23 sponsors and 21 partners of Nijmegen EGC2018. More information can be found in the magazine (p. 82) and in appendix 3 about our partners and sponsors.
- Over 100 drivers of sustainable challenges which have been discussed in Chapter 2.1 on Nijmegen EGC2018's activities and can be found in the magazine (p. 56).
- Thousands of students voluntarily joined and participated in the EGC2018 program (Magazine EGC2018, p. 40).

The results in terms of sustainable success were:

- 3 covenants were signed: sustainable shipping, sustainable healthcare and sustainable agro-forestry. This can be found in the infographic and the magazine (pp. 26 and 68).
- € 4.8 million has been provided to make neighbourhoods gas-free. This will be further discussed in chapter 3.3.3 on the effects of ECG on the energy transition and can be found in the (Magazine EGC2018, p. 14).
- A total of 22 cities signed the Call for Action at the Mayor's Conference. This initiative was also presented by Nijmegen in COP24, in Katowice. This can be found on the website¹⁷.
- We have started several initiatives on circular tenders, waste management and networks. This will be further discussed in chapter 3.3.4 on the effects of ECG on the circular economy.

The visitor results were:

- We welcomed over 25 exclusive visitors ranging from the king, ministers, members of parliament to the state secretary. This can be found in the magazine (p. 46).
- We have received over 100 work visits, groups and professionals from all over the world.
- 40% of all visitors to the pavilion (the visitors centre) was international.

Results in terms of entrepreneurship, tourism and congresses were:

- 174,000 visitors in partner events. This is discussed in chapter 2.1 and is visible in appendix 1.
- We were rewarded the Green Destinations Gold Award for sustainable tourism and -in our region- the ABN AMRO Circular Economy award.
- 65 restaurants served vegetarian options.
- Over 4,000 extra hotel bookings.
- 26 events in Nijmegen that signed the sustainable events manifesto.

The results in terms of publicity were:

- Our total communication had a net worth of € 6.5 million and 90% of all countries worldwide visited our website.
- Over 100 international websites shared information on Nijmegen EGC2018.
- Nijmegen EGC2018 was on (national) television in 15 countries
- Communication covered a wide variation: from neighbourhood newspapers to international media.

This will be further discussed in chapter 4 on communication.

Results in terms of opinion polls & resident involvement:

A study by the city panel (of about 4,200 Nijmegen residents) showed strong involvement. The study showed that 86% knew about Nijmegen EGC2018. Traditional media, such as newspapers and magazines, reached 63% of all residents. At the end of EGC2018, 30% of all residents had been able to partake in one of the EGC2018 activities, 41% felt proud that Nijmegen had been elected EGC2018 and 3% were actively organising events. A quarter of the panel had a more positive image of Nijmegen after EGC2018. Lastly, 24% felt inspired

¹⁷ <https://greencapital2018.nl/en/callforaction/>

to change their behaviour and 9% actually did so (City Panel, 2019). Behavioural change was expressed in a variety of areas. Examples can be found in the quotes of Nijmegen residents below.

“I am eating less meat, try to reduce my waste and I use my car less”

“I hung air quality sensors in my backyard to see what the true air quality around me is”

“I have applied for a subsidy to put solar panels on the roof of the school and improve waste management. Also, I have joined a project group on sustainability.”

External reports

- Reports on the 13 Challenges. Each Challenge has reported their outcome and observations.
- The social sustainability movement “Kleurrijk Groen” has also reported the outcome of their activities.

Book on Nijmegen EGC2018

The observations on Nijmegen EGC2018 were also documented in a book by Pieter Leroy (professor at Radboud University) and Nanda Kurstjens (Junior researcher at Radboud University). The writers aimed to observe Nijmegen EGC2018 as a culture: “How did it come to be, what happened, who joined and how will it continue?”. The book is called: “*Wat doen die mensen toch duurzaam? - Observations about Nijmegen as Green capital*”. (ISBN: 978-94-028-1552-8)

3.3 Effects per theme

To celebrate Nijmegen EGC2018, many events and activities were organised which resulted in quantifiable results, as can be seen in the previous chapter. However, the previous chapter does not describe the ripple effect these activities had. There are limited possibilities to quantify these indirect effects of the EGC2018 program. This chapter will qualitatively describe the effects of EGC2018. As mentioned before, the EGC2018 program was translated into five comprehensible themes. This chapter will describe the effects per theme. Each theme will show societal, environmental and economic effects. The effect description per indicator can be found in appendix 7.

3.3.1 Vibrant city

A green, healthy and clean city plays a key role in the EGC2018 program. This year enabled many projects on this topic to gain priority. This chapter will describe the effects on governance, air quality, biodiversity, agroforestry, tourism, economy and publicity.

The effect of Nijmegen EGC2018 on governance - (Indicator category: Society)

According to the theme drivers, awareness of a green city and the importance of a green city increased. Examples of this awareness in our own governance are ‘greener’ public spaces such as Esdoornplein, Joris Ivensplein, Maasplein, Daniëlsplein, a much greener Central Station area and the Valkhofkwartier area. Additionally, a variation of mobility hubs (e-hubs) and large public spaces were built greener, due to the inspiration of the EGC program.

The effect of Nijmegen EGC2018 on economy – (Indicator category: Economy)

The EGC2018 program profiled Nijmegen as a green business location, a factor for several businesses to (partially) move to Nijmegen. This resulted in new jobs.¹⁸ Secondly, EGC2018 increased collaboration between large and small enterprises and residents. An example of this would be the advisory board of EGC2018. On this board, several big business partners joined with smaller companies, students and representatives of several cultural communities. Lastly, existing and new businesses and institutions

¹⁸ <https://swm.nijmegen.nl/p37502/overzicht>

experienced a boost. For example, the newly opened Centre for Natural and Cultural Heritage (De Bastei) had a jump start of 45,000 visitors in the first year alone.

The effect of Nijmegen EGC2018 on events - (Indicator category: Society)

Due to the EGC2018 year, all big and many small yearly events came together to find how they could contribute to this year. They focussed on enhancing sustainability in terms of waste, energy and visitors' mobility. A total of 26 events signed a covenant to create a more sustainable event in the future. The effect of this meeting was that events became more sustainable, created awareness among their (broad scope of) visitors, provided room for reflection and collaborated with other sustainable organisations. Examples of such events are Music Meeting (7,500 visitors), Go Short (500 visitors), "Four days marches festival" (1.6 million visitors) and DRIFT (20,000 visitors). For example, DRIFT collaborated with AGREEn students to run the entire event on a sustainably charged battery instead of a fossil fuel generator. Additionally, the 'Zevenheuvelenloop' run is known for encouraging visitors to come by bike or train.

Lastly, residents in Nijmegen have always enjoyed having natural environment incredibly close by. Due to the EGC2018 program, we were able to reflect on this privilege through our events. As we would say: Nijmegen celebrates Nijmegen, but also her environment. Examples of these odes to our direct natural environments were: Flowlands (500 visitors), National championships Water Biking (1,050 visitors) and the Spiegelwaal concert (3,000 visitors). We believe that reflecting on, and celebrating, our natural environment increased unmeasurable awareness among all 71,000 visitors. All events can be found in appendix 1, the visual support can be found in the magazine and the visual year overview.

The effect of Nijmegen EGC2018 on air quality - (Indicator category: Environment)

Due to the EGC2018, the European trends and local discussion concerning environmental zones for fossil-fuel traffic resulted in a beautiful interplay. The EGC2018 increased the social and governmental support for an accelerated the introduction of such an environmental zone in Nijmegen.

One of the concerns in terms of air quality stems from the Waal, the lower branch of the river Rhine, that runs through Nijmegen. The Waal is a popular river used for inland shipping. An example of an event that was made possible by the EGC2018 is Ports and the City. In April 2018 a lead group of 20 European parties committed to accelerating the greening of the inland shipping sector. The declaration is called 'Declaration of Nijmegen'. The authorities and businesses that signed promised to do everything in their power to reduce CO2 emissions in inland shipping by 20 percent by 2030. The participants of Ports and the City were enthusiastic about the prospect of providing inland vessels with clean engines and clean fuels. The ultimate aim in the Declaration of Nijmegen is to have a climate-neutral inland shipping sector by 2050. As mentioned before, this declaration continued in the Green Deal, a national deal for all industries involved in the shipping industry.

Cora van Nieuwenhuizen, Dutch Minister of Infrastructure and Water Management, emphasises that there is no time to lose. "A truck can already be replaced after six or seven years by a cleaner one, equipped with the latest technologies, whereas a ship lasts forty years on average." ¹⁹ More information can be found in the magazine (p. 68).

The effect of Nijmegen EGC2018 on biodiversity - (Indicator category: Environment)

The EGC2018 emphasised the importance of monitoring (e.g.) reptiles and flora on a local, state and European level. A translation of this awareness can be seen in our construction, events and international publicity.

In our own city, nature-inclusive construction has become the new norm. For example, the Nimbus-tower has provided nesting opportunities for swifts in its constructions. Additionally, groups of residents (including newcomers) were active in building nesting boxes.

Additionally, several events were held for biodiversity. For example, the Green and Healthy Nijmegen (150 visitors) encompassed Floron (research & protection wild plants) and the city bird congress (Looking for tangible solutions together with Protection of Birds).

Several Green Capital Challenges have targeted biodiversity as well. This has enhanced awareness of biodiversity issues among Nijmegen residents and many bee hotels and insect friendly flower beds were created in the city.

19 <https://www.portsandthecity.nl/news/inland-shipping-agrees-to-substantially-reduce-co2>

The effect of Nijmegen EGC2018 on agroforestry - (Indicator category: Environment)

Agroforestry has become increasingly accepted as a new norm. Permaculture takes a longer period to cultivate and requires quite some patience. In our EGC program we were able to start a couple of agroforests and these are now becoming more and more accepted as a lovely and valuable biodiverse part of our city. More information can be found in the visual year overview.

The effect of Nijmegen EGC2018 on tourism - (Indicator category: Economy)

An unexpected side-effect of the EGC2018 program was the recognition of Nijmegen as a sustainable tourist destination. This was expressed through the Gold Award from the international Green Destinations organisation for sustainable tourism.²⁰

The EGC2018 also enabled us to amplify Nijmegen's sustainable traits to visitors. Our project team received many responses from visitors observing our city as green, a lovely living environment, a close connection of city and nature and easy-going. They also noticed a lot of bikes in general and that Nijmegen's city centre logistics is mostly conducted by electric vehicles or even cargo bikes.

The effect of Nijmegen EGC2018 on residents - (Indicator category: Environment)

Residents' support for a green living environment grew. An expression of this support can be found in several grassroots initiatives and challenges that started during Nijmegen EGC2018. Examples of these grassroots movements are initiatives at "Landgoed Grootstal", an old estate near the city border that provides communal fruit and vegetable gardens and eco-education. Another example would be "Kleurrijk Groen", an initiative to involve a multi-cultural group in our quest for sustainability. Hundreds of kids also volunteered as "neighbourhood heroes" to regularly clean up their neighbourhoods (Magazine EGC2018, p. 21).

In addition, we noticed residents were inspired by our fellow Europeans from Sweden: A trend called plogging evolved in Nijmegen. Plogging is an activity where residents clean up the river-banks and natural environment while jogging. All resident initiatives can be found on <https://www.greencapitalchallenges.nl>.

3.3.2 Sustainable mobility

It is important that people can easily get from A to B while the air in and around Nijmegen remains fresh. We provide a smart, sustainable and clean transport network. Sustainable mobility was primarily expressed in European Mobility Week. The effects will be outlined in: European Mobility Week, biking & bike parking, electric transport, inland shipping & external opportunities.

The effect of Nijmegen EGC2018 on European Mobility Week - (Indicator category: Environment & society)

EGC2018 was a great opportunity to host European Mobility Week attracting (inter)national visitors to Nijmegen. During this week we presented alternative solutions for mobility and challenges within mobility. We were ranked in the top 10 of best mobility weeks in Europe. Consequentially, we were invited to think about sustainable mobility campaigns on a national level.

In addition, this week, and so EGC2018, supported a continuing discussion on sustainable mobility in several industries. An example would be the 24-hour hydrogen race where 15 people drove through Europe with hydrogen cars.²¹ They were rewarded bonus points for visiting a European Green Capital city.

Secondly, pop-up bike parking (Picture 2) was introduced during Nijmegen EGC2018. The opening hours of the guarded parking did not meet the demand for students' bikes at night. We provided light projections to function as a pop-up bike parking.

A last example is the national Cargo Bike Festival, which is now spreading towards Berlin and another Dutch city called Groningen.



Picture 2 Pop-up bike parking projection

²⁰ <http://collection.greendestinations.org/dest/nijmegen/>

²¹ <https://greencapital2018.nl/mobiliteitsweek/waterstofchallenge/> (Dutch website)

Thirdly, the Ring-Ring app was introduced during the mobility week. This app incentivises bike use and provides the opportunity to donate the number of biked kilometres to charity. During Nijmegen EGC Ring-Ring app collected €25.000 for charity and people biked 750.000 kilometres. Due to this week the Ring-Ring app could be implemented in 18 municipalities around Nijmegen and it will probably become a more anchored concept within the region Arnhem-Nijmegen in the years to come.

In conclusion, the effect of this mobility week stimulated discussion and activities on sustainable mobility alternatives, reduction in parking space, charging stations, e-hubs and bike use. A total of activities in this week can be found on: <https://greencapital2018.nl/mobiliteitsweek/> (Dutch website).

The effect of Nijmegen EGC2018 on biking - (Indicator category: Society)

During the EGC year people tended to go by bike over 10% more than last year. We were also able to organise many bike excursions for our guests in work visits, events and other group visits, encouraging bicycle use.

Additionally, the implementation of MaaS (mobility as a service) accelerated during the EGC2018. In this programme the campus focusses the mobility instead of the mode of transportation to avoid traffic jams in and around campus during peak hours.

The effect of Nijmegen EGC2018 on electric transport (Indicator category: Society, Economy & environment)

Buses will avoid the car-free city centre as much as possible and public transport will be further expanded to an electric fleet in the next concession. EGC2018 helped to provide for further support of this decision.

Secondly, urban maintenance logistics is steering towards a low emission (electric) fleet and even operates by bike. Dar (local waste management), utilized Nijmegen EGC2018 to focus on their sustainability practices. In picture 3 you can see the cargo bike with an EGC logo used for waste management in the city centre.

Thirdly, our project team leader observed that the number of requests for pilots on sustainable urban logistics increased rapidly. The programme “slim en schoon onderweg” (smart & clean on the road) existed before, but Nijmegen EGC2018 raised awareness and helped to further support this programme.

Fourthly, we have applied for a European subsidy (Provided by INTERREG North West Europe) to place e-hubs. Due to Nijmegen EGC2018 this subsidy was brought to our attention. With as a result that we received the subsidy to build 10 e-hubs in Nijmegen. The car-share challenge during the mobility week created further (resident & governmental) support for these e-hubs. We have noticed that the neighbourhood applications for the e-hubs consisted mostly out of neighbourhoods that first participated in the car share challenge during the mobility week.

Lastly, the applications for electric charging stations for cars increased during the EGC2018 programme. This could be due to an increase in awareness during Nijmegen EGC2018.



Picture 2 – DAR cargo bike with EGC logo.

The effect of Nijmegen EGC2018 on Inland shipping - (Indicator category: Economy)

As mentioned in the previous chapter, EGC2018 enabled us to formulate the Declaration of Nijmegen. This resulted in the fact that the inland shipping issue was more widely embraced, which increased the lobby and demands for inland shipping emission reduction.

Continuously, new financial constructions were designed, and several parties were encouraged to make shipping more sustainable. In terms of ‘leadership by example’, due to the EGC2018, the Declaration of Nijmegen continued in the roundtable of Green Deal inland shipping. We have received feedback that EGC2018 gave the Green Deal an acceleration.

The effect of Nijmegen EGC2018 on External opportunities (Indicator category: Economy)

Another unexpected effect of the EGC2018 is that Nijmegen was invited to the sustainable think-tank of Albert Heijn (the biggest national supermarket). This think-tank deals with urban logistics and mobility. ²²

We are often asked to discuss about sustainable mobility policies on a national level. These requests vary from a business environment to a political environment. Velocity 2017 and EGC2018 have led to the increase of these requests.

3.3.3 Energy transition

We are transitioning to a new system of sustainable energy. Nijmegen wants to be energy-neutral by 2045. In this chapter we will further elaborate on the energy transition in our gas-free projects, new & existing cooperation agreements, networks and leadership by example.

The effect of Nijmegen EGC2018 on gas free neighbourhoods - (Indicator category: Society, economy & environment)

Nijmegen wants to stop using natural gas. In order to accomplish this goal, we need more renewable energy such as geo-thermal energy and (electric) heat pumps. To obtain these resources we needed to negotiate financial support. In our application for these financial resources we dedicated one chapter to EGC2018. This helped to obtain the financial resources we needed to implement these projects. We have started transforming 8 of 44 neighbourhoods into gas-free houses. Each year we will transform two additional neighbourhoods to complete the energy transition by 2045.

The effect of Nijmegen EGC2018 on cooperation - (Indicator category: Society & environment)

The new decentralized approach of sustainable energy requires high cooperation by residents. Gas-free neighbourhoods thus worked as a catalyst for other sustainability themes, generating civil and governmental awareness and connecting residents to bigger corporations.

Several initiatives, initiated due to the EGC2018 program, continue to be a driver for support. Examples of these initiatives are the Cooperation Windpower Nijmegen, in which 1013 residents participated to build a wind park that is now expanding to the solar park ‘Zonnepark De Grift’. The so-called “apple-pie conversations” increased inspiration and cooperation for effective sustainable energy use.

EGC2018 and the gas free project also sparked inspiration for research on geothermal energy. Nijmegen is now also found to be more attractive for companies that are active in the energy transition.

The effect of Nijmegen EGC2018 on Networks (Indicator category: Society)

The EGC2018 functioned as a platform to strengthen & connect current networks and create new networks.

Strengthening current networks

An example of an effect on our current network was the fact that our contact with national ministries increased strongly. During the EGC2018 programme we have received, not only King Willem Alexander, but 4 Secretaries of State and 6 ministers. This provided for the opportunity to present our frontrunner position in e.g. sustainable energy.

Additionally, we have improved contact with the Dutch embassies in Europe and are regularly being asked to speak on (inter)national events. These ties were a clear effect of the EGC2018 year.

Connecting networks

The connection of current networks increased. An example of this is a director of a big energy corporation cooperated with a much smaller social enterprise. Traditionally these two directors would be competitors.

²² <https://www.rvo.nl/actueel/nieuws/dkti-leidt-tot-albert-heijn-proeftuin-elektrische-en-hybride-trucks> (Dutch website)

Due to the EGC2018 they had a stronger mutual goal and cooperated on accelerating the energy transition. The “ecosystem” of our city has been strengthened.

New networks

EGC2018 Nijmegen stimulated new networks, for example, “Kleurrijk Groen”. This is a network that is driven by residents with a diverse background in ethnicity and socio-economic status. This network established many projects, including biking, energy usage and vegetable gardens. This network continues to grow and has received extra funding for 2019.

The effect of EGC2018 Nijmegen on leadership by example (Indicator category: Economy & environment)

Due to the increased awareness, partners were able to function as examples in their branch. Radboudumc, one of the official partners, showed great involvement in the EGC2018, with the organisation of CleanMED and the Green Deal Sustainable Care (Magazine EGC2018, p. 29). In December 2018, the doctors of CWZ (another big hospital in Nijmegen) decided to invest in the sustainability of their hospital by placing over 1,000 solar panels.²³ To us this is another illustration of how awareness can lead to behavioural change and leadership by example.

3.3.4 Circular economy

We are convinced that EGC created a certain awareness. This awareness translated in behavioural change as an effect of the EGC. In terms of circular economy, we have observed these effects in governance, waste management, events & networks and a general increased usage of circular materials.

The effect of Nijmegen EGC2018 on governance & city management (Indicator category: Economy)

City management appointed a (temporary) placement of a sustainability manager for public spaces. The sustainability manager is continuing with his duties in 2019 and was highly involved in the EGC2018 program. Inspired by the EGC, a collaboration of departments decided that there should be one “level 3” project (in terms of sustainability) in management of public areas. A level 3 project goes beyond legislation and ‘doing what needs to be done’ (level 1) and beyond copying best practices (level 2). A level 3 project looks at the ambition, vision, or a dream and translates that into reality. The ambitions of this level 3 project (in terms of sustainability) was translated into a highly innovative public tender on circular road reconstruction (Malderburchtstraat). This method is also known as rapid circular contracting.

This tender makes sure circularity is included in the materials that are being used, taking into account how trees (climate adaptation) can impact solar panels in the street (sustainable energy). Additionally, residents were actively involved (social sustainability) and contractors were able to co-design the street instead of a response to a pre-designed tender. This specific street is not special; it represents about 80% of all streets in Nijmegen. Therefore, it is an excellent pioneer in circular tenders: If this project reaches the intended goals, it can be copied throughout the city.²⁴

“The EGC really spread a general awareness within the municipality which made it easier to connect departments and people for frontrunner projects.”

– Geert Hendriks – Sustainability coordinator public spaces Nijmegen

Nijmegen EGC2018 accelerated this frontrunner project. There was a well-established sustainable network within the municipality and a general awareness that sustainability should be the norm and not an add-on. As a result, there are now more stringent terms and conditions on sustainability for tenders. This summer (2019) sustainability will become a spearhead in the vision of our economic policy.

²³ <https://www.cwz.nl/over-cwz/nieuws-en-pers/nieuwsoverzicht/artsen-investeren-in-cwz-met-aanschaf-van-ruim-1000-zonnepanelen/>

²⁴ <http://www.gwwtotaal.nl/2019/04/05/rapid-circular-contracting-bij-aanpak-malderburchtstraat/>

The EGC programme also provided the municipality with arguments for becoming a launching customer for several products. Examples are:

- 10 'eco lounges' – public couches made from e-waste material (Magazine EGC2018, p. 57).
- Natural fences made of 48% old work clothing, 48% recycled plastic and 4% resin (Magazine EGC2018, p. 31).
- Circular concrete used for sewage pipes. The use of this material accelerated by sharing the risk between contractor and the municipality of Nijmegen.
- Rebuilding circular bus stops. By maintaining the same square foot meter, the tiles on the surface could be reused.
- A 3D printed bridge will be placed in Nijmegen.²⁵
- 3 circular bridges are proposed to be built in Nijmegen (Dukenburg).

The effect of Nijmegen EGC2018 on waste - (Indicator category: Environment)

Our city's waste management is able to separate over 30 forms of waste. During the EGC, orange peels (for perfume production) were added as mono-streams in our waste management systems. Additionally, the ARN is working on a project to recycle diapers. The EGC2018 enabled us to demonstrate our waste management and inspire other cities. The project team received many positive reactions from (inter)national visitors.

The effect of Nijmegen EGC2018 on events (Indicator category: Society)

We have organised several activities to honour EGC2018. Numerous activities were initiated in 2018 and continue to exist and spread the inspiration, connection and awareness. Examples are: The national Circular Economy Festival (Magazine EGC2018, p. 18) is becoming a new tradition, the Walk of Waste continues to be available at the Waalkade, Plastival continues to spread awareness on plastic waste²⁷ and the biggest summer festival "Four Days Marches festivities" continues its sustainable waste management and other sustainability efforts in the years to come. They refer to this as "Party into the future".²⁸ The event director shared that EGC2018 pushed this festival to their sustainable limit.

Additionally, we were positively surprised by residents' response to areas of sustainable improvement. For instance, when waste management was not up to standards during big events, residents would immediately and strongly argue for improvement.

The effect of Nijmegen EGC2018 on business opportunities (Indicator category: Society & economy)

- We won the ABN AMRO Circular Economy award for most circular region. The EGC provided for argumentation to win this award.²⁹
- Rabobank founded the national Circular Economy Festival in 2018 in Nijmegen which provided for a broad scale of business opportunities for local and national professionals. This event continued in 2019.³⁰
- According to the project team, several partners of the EGC2018 program were invited to work on circular economy abroad and in other national locations.

The effect of Nijmegen EGC2018 on network & awareness - (Indicator category: Society)

- Corporations, start-ups and scale-ups increasingly connected. This connection led to changes in policy. For example, Rabobank has developed a new approach that enables SMEs to gain better insight into their circular opportunities. This "circular kick-start" is now a service incorporated in the

25 <https://www.gelderlander.nl/nijmegen/betonnen-brug-in-zwanenveld-komt-uit-3d-printer-en-is-langste-ter-wereld~afd42940/>

27 <https://www.ugenda.nl/agenda/event/107990-plastival>

28 <http://partyintothefuture.nl/>

29 <https://www.duurzaam-ondernemen.nl/regio-arnhem-nijmegen-en-werkspoorkwartier-winnen-abn-amro-circular-economy-awards/>

30 <https://www.smart-circle.org/circulareconomy/>

Rabobank policy.³¹ EGC provided a platform in which companies like Rabobank and SME's could easier come together and develop such programmes.

- Schoolchildren saw Nijmegen EGC2018 as an opportunity to knock on the doors of the municipality and ask why they were not able to properly separate waste in their school. It may be concluded that awareness or empowerment increased due to the EGC2018.
- Nila Patty is an international Nijmegen resident that lives 0-waste. During the EGC she inspired many people to live 0-waste by giving workshops on making your own toothpaste. EGC2018 gave her the platform she needs to lower the barrier on a 0-waste lifestyle for other residents.

“EGC provided the suitable platform to deliver a message of change. Changes where residents can easily be part of, changes that directly impact their life. A zero-waste lifestyle shows that changes start with yourself”
– Nila Patty.

The effect of Nijmegen EGC2018 on behavioural change (Indicator category: Society)

During the EGC2018 programme, the use of circular materials increased:

- We were able to present one completely circular home (Visual year overview, 2019).
- A mayor's chain was made from metals from old phones, which turned out to be worth more than the actual chain. (Magazine, p. 31)
- All workwear from the university medical centre (hospital) are circular. To spread awareness, they made an “EGC-point” in the entrance of the hospital (Visual year overview, 2019).
- An old (Honig) factory was transformed in a workspace for circular start-ups. These circular products (bags, bottles etc.) had more sales opportunities due to the EGC2018 hospital (Visual year overview, 2019).

3.3.5 Climate adaptation & water

The fact that the temperature is rising has many significant consequences. Since the Waal is overflowing more often, we have relocated the river dike Lentse Waaldijk and created the Spiegelwaal. We have observed the effects of EGC2018 on climate adaptation & water in our “Operation Breaking Stones”, heat stress and the river park (and Spiegelwaal).

The effect of Nijmegen EGC2018 on heat reduction and water management

Operation “Steenbreek” (Operation Breaking Stones) - (Indicator category: Society & Environment)

In the EGC year we have removed 190,000 paving stones for “Operation Breaking Stones”. This is a publicity campaign to stimulate people to remove paved areas from their gardens and replace them by plants and flowers. Green gardens reduce heat by up to seven degrees and improve drainage and water management. Additionally, green gardens support biodiversity. This operation resulted in national publicity and awareness but also in tangible results as the change in scenery is literally visible in residents' backyards.

31 <https://www.rabobank.nl/lokale-bank/rijk-van-nijmegen/benut-circulaire-kansen-met-de-rvna-circulaire-kickstart/>

Heat stress (Indicator category: Society, economy & environment)

During the EGC2018 programme the awareness of heat stress rose. We have seen a trend in entrepreneurs and residents collectively maintaining green areas in the street.

Additionally, the pressure on urban engineers to strive for the most sustainable projects is high when a city is European Green Capital. Therefore, the new neighbourhood “Hof van Holland” will be built with maximum sustainability.³²

The effect of Nijmegen EGC2018 on subsidies & projects - (Indicator category: Economy)

In our subsidies we see that there was more demand for the subsidy for green rooftops and disconnecting rainwater from the sewer system. The EGC2018 could be a variable relevant factor in stimulating this behavioural change. Additionally, the EGC2018 provided for an extra push in climate adaptation projects. Nijmegen was one of the first regions to act upon the Regional Adaptation Strategy (RAS).

The effect of Nijmegen EGC2018 on the river park - the Spiegelwaal - (Indicator category: Society & environment)

Rivierpark is a unique recreational area that came into being after shifting the dike and creating more overflow space for the Waal. This procedure was much needed in order to protect the residents against the water. As part of the regional project ‘Room for the Waal’, the river received space in the heart of Nijmegen, especially at the place where the river makes a sharp turn. A side channel was created: “the Spiegelwaal”. When there are high water levels, the side channel fills up, thereby reducing the pressure on the Waal itself. As a result of digging the side channel and shifting the dikes, an elongated island emerged in the middle of the Waal: Veur-Lent. This island is located right between the historical city centre and the new city district of Waalsprong.

This major climate adaptation project provided for a recreational area that is embraced by Nijmegen residents. It is open for swimming, canoeing and a suitable location for events. During the EGC2018 the Spiegelwaal provided the opportunity to hold informal and recreational events for a bigger crowd such as:

- **NK Waterfietsen (Dutch championship Pedal Boating)**– As a sideshow to the recreational cycling event around Nijmegen, the pedal boat games were organised. Kids and adults participated in this event. ³³
- **Spiegelwaal concert (river concert)** - A classical concert on the side channel of the river the Waal. With the city’s skyline at the background this concert sold out within minutes.

Additionally, it offered many opportunities to share Nijmegen’s approach to climate adaptation. EGC2018 Nijmegen was an excellent opportunity to demonstrate this project with numerous national and international professionals and visitor groups.

3.3.6 General effects

EGC2018 Nijmegen had an effect on a variety of initiatives. Amongst which initiatives that were not described in the themes above. The general effects of EGC2018 will be described in terms of residents, social sustainability, schools and students, surroundings and hospitality and sustainability.

The effect of Nijmegen EGC2018 on Residents - (Indicator category: Society)

The EGC2018 programme had an effect on the entire city, her partners and surrounding. Residents showed increased awareness, but also behavioural change: We saw an increase in subsidy and loan requests for solar panels, green roofs and disconnection of gas.

The cities challenges founded by residents continue named: “My green neighbourhood”. In 2019, 9 neighbourhoods have 9 new sustainable initiatives designed and executed by residents.

The effect of Nijmegen EGC2018 on Social Sustainability (Indicator category: Society)

During EGC2018, social sustainability has been a central thread throughout the entire program. Some employees and interns who were involved in the EGC2018 project team were excluded from the labour

³² <https://www.hartvandewaalsprong.nl/hart-van-de-waalsprong/>

³³ <https://greencapital2018.nl/kalender/>

market. They saw increased opportunities for re-entering the labour market. There was also a fair representation of non-western immigrants and the demands for social return on investments were strengthened.

The effect of Nijmegen EGC2018 on schools and students (Indicator category: Society)

The number of eco-schools rose due to the EGC2018. Radboud University applied to become an eco-campus and would not have done this without EGC2018 programme. The university was able to host over 50 tours for (international) professionals which also set a green route on campus in motion. The green routes were spread throughout Nijmegen, they can be found in the magazine (p. 31). Another challenge (NL bloeit) inspired the university to seed plants in numerous areas on campus. Additionally, it accelerated the placing of a sustainability director and a green office at the university. Additionally, students were represented by AGREEn students in the advisory board of the EGC2018 Nijmegen. Lastly, Radboudumc was able to host CleanMed in 2018 due to the momentum of Nijmegen EGC2018.

Secondly, HAN University of Applied Sciences committed to organising, supporting and hosting many sustainable events during the EGC2018 year. They described this year as an opportunity to share knowledge, initiatives and activities.³⁴

Lastly, the general applications for a greener schoolyard increased in 2018. This “plant a tree day” resulted in 6,000 trees and bushes in 32 primary schools (Magazine EGC2018, p. 76).

The publicity of Nijmegen EGC2018 really emphasised the importance of sustainability. With as a result that I was able to focus my work on practical content (the ‘what’) instead of preaching the ‘why’.

– Harriete Laurijssen – Sustainable policy maker Radboudumc.

The effect of EGC2018 on Nijmegen’s surroundings (Indicator category: Society)

EGC2018 provided for positive interplay with Nijmegen and its neighbouring cities and villages. For instance, Berg end Dal also won a gold award in tourism. Other neighbouring municipalities also started new initiatives on sustainability which provided for mutual inspiration.

In addition, the relay baton with the EGC2018 logo was passed on through the entire province. This resulted in a better coherence of Nijmegen and her surroundings in terms of sustainability.

The effect of EGC2018 Nijmegen on Hospitality sustainability

Several restaurants and hotels pro-actively started their own initiatives.

- The Sana dome (a wellness hotel) found a way to use less chlorine in their swimming pools.³⁵
- Guesthouse Vertoeff aspires to be completely energy neutral and demonstrates excellent waste management. ³⁶
- Hotel Van der Valk is one of the most sustainable hotels in the Netherlands. ³⁷
- Green Capital Challenges challenged all restaurants in Nijmegen to offer a minimum of 2 vegetarian dishes.

34 <https://specials.han.nl/themasites/greencapital2018/meedoen/> (Dutch link)

35 <https://www.sanadome.nl/estafettestokje> (Dutch link)

36 <https://www.nijmegen.business/uitgelicht/guesthouse-vertoeff-het-nieuwe-groene-plekje-in-nijmegen> (Dutch link)

37 <https://www.valknijmegen.nl/over-ons/duurzaamheid> (Dutch link)

Chapter 4: Communication and publicity

During the European Green Capital in 2018 the city of Nijmegen and its partners generated a lot of publicity. The estimated total reach was over 100 million with an estimated PR worth of over 6 million euros (Clipit, 2018). The channels used varied from online media, the website, printed promotion, television and radio. These channels were divided into governmental media, media from partners and independent news outlets. In all media, the European green capital logo was used in accordance with the letter of intent. In appendix 2 you can find a list of all communication channels used.

Online media varied from the general Nijmegen European Green Capital (EGC) website, social media and news platforms. The most important social media account for Nijmegen Green Capital is the City of Nijmegen Twitter account and the EGC2018 Nijmegen social media. Several other official government or European Union accounts play a significant role in expanding social media reach (Clipit, 2018). Several involved individuals (politicians, partners and EGC contributors) helped to further expand the social media reach. The website attracted about 48,000 visitors from over one hundred countries. Next to the homepage, the green routes attracted many visitors. The green routes indicate several paths to visit sustainable hotspots in Nijmegen. These routes continue to attract visitors in 2019.

Throughout the entire year EGC2018 also generated (inter)national press coverage. Local newspapers such as 'De Gelderlander' and 'De Brug' but also national television and radio covered EGC. A total of 20,000 messages appeared in a variety of newspapers and on social media.

Printed media varied from banners, flyers, pencils, bus stops, t-shirts, chairs, beach flags and much more. The most prominent flags were placed on the roundabout Keizer Karelplein with 50,000 cars per day and the Nijmegen central station with 44,500 visitors per day. A list of all communication means can be found in appendix 2.

What did this publicity do for the city?

The main focus was visibility. In 2018 Nijmegen drew international attention and a representative panel of Nijmegen's residents shows that awareness of the EGC increased from 38% to 86% in 2018 (Interviews city panel). The majority (80%) of all residents showed a neutral to positive perception of the EGC2018. The EGC brand transcends the year of 2018 in its activities and media attention. For example, several activities, such as "Kleurrijk groen", "Operation Breaking Stones" (Operatie Steenbreek) and the circular economy fair, soil (bodem) congress, green Friday continue in 2019. Consequentially, the EGC continues to gain publicity in 2019. We have received work visits from countries such as the U.S.A., Belarus and Denmark. Dutch cities such as Leeuwarden were also able to visit EGC2018 in Nijmegen. All visits can be found in the magazine (p. 46).

Visitors centre

Inspired by the visitors centre in Ljubljana, Nijmegen placed a sustainable pavilion in the middle of the city centre. The arched building built from logs was designed by the Flemish architect Chris Poulissen, who also designed the bridge "De Oversteek" in Nijmegen. The unique interior design was done by Jordan Artisan and a team of local designers. They provided a beautiful, sustainable, and recognisable design in which everyone could feel at home.

The pavilion functioned as the "face" of the Green Capital for Nijmegen, simultaneously providing hospitality and awareness. The pavilion received 16,000 visitors (40% international) in 2018, amongst whom the king and Rob Jetten (a leading national politician). Facilitated by many volunteers, visitors could discover everything about the Green Capital at any given time or day. Volunteers provided brochures about the multilingual Green Routes, information about events, activities, the Green Capital Challenges and much more. The pavilion was easy to disassemble and will be rebuilt and reused in Antwerp (Belgium). A summary and visual support can be found in the visual year overview and the events calendar.

Volunteers of the pavilion felt inspired to connect to people through the EGC. Volunteer Wil Verheijen even claimed to have fallen in love with the pavilion and all the inspiration it brought. Visitors

38 <https://www.rtlnieuws.nl/facts/artikel/4141611/zo-gevaarlijk-zijn-rotondes-bij-jou-de-buurt>

39 <https://www.gelderlander.nl/nijmegen/nijmeegse-ns-stations-steeds-drukker~ab204084/>

described the visitors centre as: “A beautiful and inspiring place”. A few examples from the guestbook can be found in appendix 8. Further information can be found in the magazine and a visual demonstration can be found in the visual year overview.

Chapter 5: Hospitality and visitors

EGC2018 provided for the opportunity to receive many work visits, group visits and touristic visitors. A list of all groups and work visits can be found on page 46 of the magazine. Examples of these visits are: The Association of European Border Regions (AEBR), The Association of European Regions (AER), members of the European parliament, delegation of municipality councillors from Essen (former EGC), several ministries, provinces and other cities came to visit Nijmegen.

The European interplay continues after the EGC2018. We have also been invited to speak in many other cities, worldwide. For example, the German army and the royal house asked us to extend the inspiration we have received during the EGC2018 Nijmegen.

Chapter 6: Lessons learned & future plans

Lessons learned

The most important lessons learnt during Nijmegen EGC2018 can be expressed in terms of increasing and amplifying involvement, cooperation, social sustainability and the communicative strengths of the chosen themes. Throughout the EGC2018 the municipality of Nijmegen chose a responsive position.

- *Amplifying and increasing the involvement.* The expectations of the EGC2018 were high, and the responses to this year were predominantly positive. Naturally, there was also criticism. For example, people questioned if all parts of society were sufficiently involved. Considering the 200 bigger and smaller events with 10,000 people actively representing all parts of society, we would say we have succeeded. Several European professionals reflected on and worked towards a more sustainable future, and thousands of schoolkids, students and volunteers contributed. Nijmegen was visible in Europe's travel guides and the European Parliament. The broad scope of involvement can be used throughout the years to further the good work that has been done thus far.
- *Cooperation.* The involvement of several partners was high when applying for EGC2018 award. Thereafter, this involvement only grew. We have effectively used the knowledge of residents, organisations, schools, universities and companies to realise a wide variety of projects. Without the enthusiasm and intrinsic situation of these stakeholders we could not have reached these goals. We are happy to find that Oslo seems set to follow up on the active involvement of residents in the form of the challenges. In our vision the goals of every EGC should be focussed on professionals, organisations and residents.
- *Social sustainability.* Despite the effort to involve all residents, it proved to be quite a challenge to reach out to groups who are not directly motivated by sustainability. We have tried to reach these groups through a green prize competition, apple-pie conversations and actions for the foodbank. We have concluded that resident-initiated challenges were best able to reach these groups.
- *Impact of the brand of the award.* Looking back, we can say that the EGC2018 year resulted in many positive outcomes. This is also described by the mayor (Magazine EGC2018, p. 5). Winning this prestigious award did not only result in an increase in our reputation on sustainability but also increased the publicity of our city as a whole. We are now often actively invited to participate in various European projects. The European acknowledgement is higher than expected. However, we found that the EGC was less known on a national level. At times, this resulted in challenges in terms of national support.

Future plans

How will the EGC2018 shape the future?

- Further expand the knowledge and network on the five themes. We want to do this by translating all attention and energy into comprehensible goals, programs and execution. Additionally, we want to continue to organise work conferences and share knowledge to come to stronger programs.
- Scale-up successful initiatives. Many initiatives have proven to be successful in 2018, examples are "Kleurrijk Groen", Operation Breaking Stones, and sustainable terrace cushions "Sit and Heat". We can use the knowledge and network of 2018 to further expand successful initiatives in the future.
- We can make the city, neighbourhoods and region future-proof on all themes. In cooperation with partners and residents.

We have seen that the energy transition and sustainable mobility have already taken several steps on the transition path towards execution. Therefore, our focus will mainly lie in a vibrant and climate-adaptive city.

Chapter 7: Financial overview

The financial overview of the Nijmegen EGC 2018 program is summarized on page 42 of the magazine. The budget added up to € 3,89 million. The expenses were (x € 1,000.-):

- Organisation: 774
- Execution and production: 690
- Hospitality and pavilion: 434
- Communication (products): 397
- Own productions: 531
- Support for other EGC2018 activities: 675
- Challenges and resident initiatives: 389

These expenses were covered as follows:

- Nijmegen municipality:
 - Extra budget: 1.300
 - Regular sustainability budget: 640
- Other financial partners:
 - The province of Gelderland: 1.360 (provisional)
 - European Commission: 95
 - Sponsoring and third parties: 495

The expenses did not exceed the (adjusted) budget. The contribution of the province of Gelderland still has to be finalized in the second half of 2019 and the figure stated above is therefore provisional.

Many partners have supported the Nijmegen EGC2018 program in kind instead of in cash. The value of the in-kind support is not expressed in the financial overview as it is impossible to express in reliable financial terms. Some rough estimates indicate that it could be a higher figure than the total project budget!

When considering return on investment, it is even harder to produce hard figures. The figures that are available, e.g. the total communication value of the Nijmegen EGC2018 campaign, suggest substantial economic value of the EGC2018 program. On the other hand, consultants indicated that the EGC2018 campaign was probably too small as an economic intervention to show conclusive direct effects on local and regional economic parameters. And probably rightfully so, as the EGC2018 program was never intended nor set up as an economic intervention. It was a societal intervention, aiming primarily on indirect effects such as awareness, support, participation and behavioural change.

Chapter 8: Conclusion

During the European Green Capital in 2018, Nijmegen was able to share knowledge, network and inspiration with the entire world. Especially with European counterparts. We received 14,000 professionals. From private and public organisations: The Association of European Regions (AER), members of the European parliament, delegation of municipality councillors from Essen (former EGC), several ministries, provinces and other cities.

These visits not only enabled us to share our knowledge about, for instance biking infrastructure, waste management and climate adaptation, but we also provided a platform for international connection. Together with Nijmegen's corporations and partners we organised international professional events like EcoProcura, CleanMed, EURAF, RReuse and ENAS in which Nijmegen provided the platform for all visitors to share their knowledge on sustainability. However, the year was not limited to international cohesion and inspiration. It resulted in concrete agreements and even changes in strategy on an international level. Agreements such as: The Call for Action, the Declaration of Nijmegen, sustainable healthcare and sustainable agro-forestry. These agreements symbolise the continuation in 2019 and the years to come of the sustainable impact EGC2018 had. It has been a massive learning experience for all involved!

Nijmegen received awards for its frontrunner position on several occasions. Foremost, we were awarded Europeans Green Capital 2018. Additionally, and perhaps consequentially, we were awarded the ABN AMRO Circular Economy award and the Green Tourism award. As a result, Nijmegen is now regularly invited to share knowledge on various international events, confirming Nijmegen's international position in sustainability.

Parallel to the international impact, Nijmegen was also able to put sustainable development into effect locally and to anchor this in her own policies due to the EGC2018 Nijmegen. This can be seen in the installation of 10 new e-hubs, several 'greener' public areas and the initiation of a 'level 3' circular tender of 'Malderburchtstraat'. Additionally, 4.8 million euros was provided for the gas-free transition of 44 neighbourhoods, and in 2018 the first eight neighbourhoods had already started. Moreover, Nijmegen is taking a pioneering position in terms of inland shipping by investing in onshore electric facilities and stepping up as launching customer for circular products (from eco-lounges to sewage pipes).

Additionally, this sustainable transition is not only observed within governance; residents are also actively supporting and participating in this transition in 2018 and the future. Together with Nijmegen's residents, Operation Breaking Stones has been realised. Removing 190,000 paving stones and planting over 10,000 trees and plants. Furthermore, the local initiative 'Kleurrijk Groen' continues to involve the entire multicultural society in Nijmegen in sustainability. In addition, an increase in applications for subsidies for solar panels, electric car charging stations, green schoolyards and disconnection of gas shows behavioural change of Nijmegen's residents. Lastly, during the EGC2018 Nijmegen's residents have shown great involvement in a decentralized energy approach in collaboration with large energy cooperation agreements; 1,013 residents have already participated in the creation of a wind park.

All this shows that we have woven a much closer and stronger network of people and parties involved in the sustainable future of Nijmegen. That must be a strong foundation for all the difficult steps we still have to take on the sustainable transition path.

Furthermore, several local activities continue in Nijmegen. One example is the Circular Economy Festival (400 professional visitors). In addition, 26 events signed the sustainability petition, pledging a sustainable event now and in the future, resulting in sustainable events but also in raising awareness and inspiring over 1,656,700 visitors every year. Thereby, 65 restaurants will have vegetarian options on their menu. Moreover, several organisations and partners of Nijmegen used the EGC2018 as an opportunity to experiment in sustainability and change their governance.

Lastly, EGC activities on a regional or national level also continue. The province of Gelderland, the biggest financial supporter of the Nijmegen EGC 2018 program and a truly invaluable partner for the EGC year, has played an important role in this. It has scaled up publicity and initiatives from a local to a regional and sometimes international level. For instance, the relay baton for sustainable initiatives, but also cross-border initiatives on air quality. The Ring-Ring app was developed in Amsterdam, initiated in Nijmegen in 2017 and scaled-up in the Green Capital year 2018. The app is now regional. Furthermore, the relay baton has not only

been passed on throughout the entire province, but also to Essen and Oslo, passing on stories and good examples. Additionally, Nijmegen was also the first region to react upon the Regional Adaptation Strategy (RAS). Due to the EGC award, Nijmegen has become much more visible and relevant as a partner for preparation of national policies and strategies, e.g. on sustainable mobility.

In conclusion, being European's Green Capital was a great learning experience, highly inspiring and remarkably impactful. In this year we have reached all internal and external goals. This required hard work from a team of extremely dedicated and passionate people, but it was definitely worth the effort. And it would have been impossible without the support of all the residents, volunteers, partners and sponsors.

Chapter 9: Literature list

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- Jury Report. (2016). *Jury Report - European Green Capital Award 2018*. (n.p.): European Green Capital.
- Magazine EGC2018. (2019). *Once a Green Capital*. Municipality of Nijmegen. Nijmegen: (n.p.).
- Visual year overview. (2019). *How Nijmegen turned Green*. (Binder Online Video) Collected from Visual year overview Green Capital 2018: <https://jaaroverzicht.greencapital2018.nl/en>

Chapter 10: Appendices

The appendices will encompass the list below.

1. Overview of events
2. Summary of used media
3. All partners
4. Jury report
5. The infographic
6. Interviews with project managers
7. Effects described per indicator
8. Examples of the guestbook

1. Overview of events and visitors

	Visiting delegations		2.000
Partnerevents	four days march festival		
	Oranjepop		
	Bevrijdingsfestival (liberation festival)		
	Music Meeting		
	Festival op 't Eiland		
	De Kaaij		
	Valkhof Festival		
	De dag van het Levenslied		
	Valkhof Theater Avenue		
	Afrika Festival		
	MOUT		
	Gebroeders van Limburgfestival		
	Splash		
	Oddstream		
	Het Nest		
	Drift		
	SMKMRKT		
	Bruggenloop (A run)		
	Stevensloop (A run)		
	Zevenheuvelenloop (A run)		
	Marikenloop (A run)		
	City Trail Nijmegen		
	Night Run		
Eiland Run			
Fiets4Daagse			
De Ronde van Nijmegen			
GC January	Wondertuin (Opening festival Miracle garden)	11.000	
	Circulaire woning (circular home)	800	200
	Duurzaamheidscafé circular economy (Sustainability café circular economy)	150	50
	Architectuurprijs Nijmegen (Architecture price)	50	150
	Debate 'Energytransition on the political agenda'	150	
	Handover ceremony		600
February	Science Café	50	
	Radboud Reflects	80	
	Opening visitors' pavilion	75	75
	Nijmeegse Kinderraad (Children's' board)	100	
	Walk of waste game	0	
	Voedselbos EetMeerBosch (Agroforest)	84	
	Sustainability café for waste	100	50
	Year Congress Gelders' Energy agreements		466
	IWAN tour and workshops	86	
	afvalrace (Waste challenge)	?	
March	Wandelen voor water (Walk for water)	450	
	Sustainability and fashion	90	
	Partnership Urban Mobility	nvt	
	Expo oog voor toekomst (Look for the future expo)	100	
	Boomfeestdag (Plant a tree day)	2.000	
	Boekpresentatie park Brakkenstein (Book presentation)	50	
	Duurzaamheidscafé biodiversiteit (Sustainability café biodiversity)	100	60
	Duurzaamheidsmarkt ROC (Sustainability market)	250	
	IVN bomencursus	30	
	Lezing alle kleine beestjes (Lecture small animals)	25	
	Netwerkontbijt (Network breakfast)		80
	Radboud reflects	50	
	Kinderklimaattop (childrens' climate summit)	150	
	Lerarendag aardrijkskunde RUN (teachers day)	0	26

April	Congress Ports and the city	0	335
	Duurzame mobiliteitsmarkt (sustainable mobility market)	200	
	Europese bijeenkomst stadslogistiek (European urban logistics meeting)		150
	Vrede van Nijmegen penning (Peace of Nijmegen medal)	250	250
	Duurzaamheidscafé mobiliteit (Sustainability café mobility)	50	50
	Groencursus IVN (Green course)	30	
	Growing green city routes	95	
	Woonbeurs Nijmegen (Housing fair)	115	
	Schone scheepvaart en metingen Waalkade (Clean shipping)	0	
	Regiobijeenkomst Klimaatadaptatie (Region meeting climate adaptation)		50
	Autostad Nijmegen (Car city Nijmegen)	200	
	Festival Art Laboratory	800	
	Film festival Go Short - Go Green	500	
	Werkconferentie Groen in beweging (Work conference Green and Exercise)		150
May	GC Fashion week	250	97
	Groene week campus RUN (Green week)	400	
	NK Waterfietsen (Dutch championships pedal boats)	1.050	
	Regiobijeenkomst klimaatadaptatie (Region meeting climate adaptation)		70
	Rondje Noord	590	
	Circular Economy festival		400
	Duurzaamheidscafé duurzame evenementen (Sustainability café events)	50	50
	EURAF Conference		200
	European Green week	0	
	Waterkwaliteitscampagne (Water quality campaign)	20	
	Onderscheiding Grenzland Europäer des Jahres		150
	Odd Café duurzaamheid en technologie (Sustainability and technology café)	15	
	Climate Alliance Board meeting		25
	Opening Bastei	4.800	200
	HAN-IMAGINE Global Goals Event	150	70
	De Dag van Stad en Regio (Day for the city and the region)		200
	Landelijk festival Vier de Natuur (National festival celebrate nature)	300	
	Zoemessie Nijmegen	50	
	Uitreiking Koning Willem I Prijs (Awarding King Willem I Price)		200
	Lecture Victor Westhoff	100	100
June	Nijmegen Klinkt	50	
	Open tuin De Villa	200	
	Inspiratiemarkt duurzaam verbouwen (Inspirational market sustainable cultivation)	250	
	Zwerfvuilactie (Marine litter-action)	50	
	Next Generation Athletics-Green Edition	200	
	Bloemerstraat Park(ing) day	50	
	Nijmegen Open tuinendag (Open garden day)	500	
	Congres Circulaire oogst 4.0 (Circular harvest congress)		129
	Actie Wiedenwiedenweg	25	
	Duurzaamheidscafé energie (Sustainability café on energy)	100	70
	Projectweek 'jongeren en circulaire economie' (Teenagers and circular economy)	140	
	MVO Award uitreiking (CSR Awarding)	0	170
	Meeting of Minds		130
	Green Blue Festival	0	
	Excursie Openbaar Groen (Public green excursion)		100
	Symposium Sustainability RUN		100
	Aankomst Green Bikers (Arrival Green Bikers)		6
	Ontvangst buitenlandse delegaties (Receiving foreign delegations)		50
	Meet & Greet bedrijfsleven (For businesses)		80
	Meeting EU Green Capitals		15
	EGC Award Ceremony & Green Leaf Award		200
	Netwerkbijeenkomst Green Capital en Green Leaf (Network meeting EGC & Green Leaf)		40
	Netwerkdag Operatie Steenbreek (Network day 'operation stone breakers')		150
	Struinwandeling (Walk)		
	Congres De Veranderende Stad (Congress changing city)		225
	Windenergiefestival "Blowlands (Windenergy festival)	150	
	Africa festival goes 'Kleurrijk Groen'		200
	HAN/FEM Knowledge Tour	100	
	Conferentie Groene Schoolpleinen (Conference green schoolyards)		60
	Spiegelwaalconcert	3.000	
	Internationaal symposium "Follow the Green Track"		100
	Groene Wandeling met Lokale Tafel van Morgen (Green walk)	20	
GC July	Bezoek koning (Kings visit)	40	15
	Historische tuinderij warmoes lent	200	
	Duurzaamheidscafé speciale editie (Sustainability café - Special edition)	20	
	Zwerfvuil Ufo (Marine litter UFO)	0	
GC August	Introductieweek HAN & RUN (Introduction week universities)	15	
	Landelijke NME tweedaagse (National: Nature & Environmental education)		120
	Open Tuin De Villa	200	
	Summerschool klimaatverandering (Summerschool climate change)	50	
	Tango Festival	80	

September	Car free Sunday and Waalbrug festivity	6.000	
	Open-day containerterminal BCTN		180
	Smart mobility	215	
	Bikers and pedestrians	495	25
	Public transport	0	
	Zero emissions and symposium campus Heyendaal	50	25
	Innovation festival mobility	100	
	Green steps	150	
	Car share activity	60	
	Hydrogen challenge	26	
	Ring Ring: Bike for yourself, the environment and charity	0	
	Test-days e-bike	50	
	Usage bike-taxi's from Tilburg	200	
	Congress Water Smart Cities en Green blue rooftops		130
	Duurzaamheidscafé energiebesparing (Sustainability café - Energy saving)	50	50
	Festival Aardgasvrij Nijmegen-Oost (Festival Natural gas-free Nijmegen East)	150	30
	Flowlands	500	
	Global Green Destinations Days & World Tourism Event		200
	Inspiratiemiddag Groene Metropool (Inspiration afternoon green Metropool)		10
	Hart voor de aarde (Heart for the earth)	42	10
Sciencecafé Economy	30		
Soil4U dag	71		
The Big Draw	100		
October	Congress Cleanmed		350
	Congress An Innovative Truth		200
	Congress City as a business-model		100
	Congress Ecoprocura		400
	Documentary-day Sustainable fashion	50	
	Duurzaamheidscafé voeding (Sustainability café - Nutrition)	100	50
	Duurzame Horeca-challenge (Sustainable hospitality)		65
	ISIS-symposium		200
	Lecture 'How to change climate change?'	25	25
	Meet-up local economy	25	25
	Nacht van de nacht (Night of the night)	300	
	National IVN-member day	250	250
	NIS meets NEC		35
	Het Oogstfeest (Harvest party)		125
	Open Dag Circulaire Modelwoning (Openday circular model residency)	20	
	Plaatsing Ark + 10 groene geboden	150	
	Symposium Bewonersenergie (residential Energy)	50	
	Meeting Urban Mobility Partnersip		10
	Voedselkaravaan (Food caravan)	25	25
	Workconference Green, Healthy and exercising		60
Workshop DIY Detergents	50		
November	Atelier Meer ² on Tour	300	
	Evening with Jan Terlouw	150	
	Call for Action & Mayors Conference		90
	Debat vormgeving energielandschap (Debate on Energy-landscape design)	25	25
	Duurzaamheidscafé handel (Sustainability café trade)	100	60
	Expeditie tuinfruit en Oogstfeest (Gardenfruit and harvest party)	270	
	The Cellulose Congress		150
	InScience Festival	8.000	
	International RREUSE Conference		250
	National Warmth Congress		360
	Netwerkevent Energy x change		150
	Ontbijtsessie 'Van willen naar doen' (Breakfast session 'from wanting to doing')	20	
	European Schooldebate tournament	150	
	Seminar 'duurzaamheidspraktijken' (Sustainability practices)		30
	Congress 'Sustainability in sports'		150
	Symposium 'De Schepping'	50	
December	Slotevent duurzaamheidscafé (End event sustainability café)	200	50
	Congress 'Urban mining to Biobased Circulair Building		50
	Congress Green and Healthy Nijmegen		150
	Floron-day	150	150
	Green Capital Fashion workshops & endexposition	4.000	
	Green Friday	1.500	
	Climate summit Katowice (Call for Action)	0	
	Lezing dweilen met kraan dicht	25	
	Symposium CheckK "Circular and Climateneutral MBO".	150	
Wereldbodemdag (World soil day)		150	

2. A summary of used media

Hardcopy media

Shelter-display advertisements
Month calendars
Flyers
Flags
Beach flags
Banners
Rollup Banners
Pencils
Badges
Green neck warmers for green friday
Posters
Information booklets (Dutch, English, German)
T-shirts
Request form Guided route
Events-sign in the entrance of Nijmegen
Stickers
Route maps
Relay letter
Display graphics
Objects such as an XL-chair
Notepads
Factsheets/information sheers
Menu's
Nametags
Cheque for hand-overs
Invites
Reversed graffiti
Infographics
Information panels pavilion
Information signs
Façade stickers on the Valkhof museum

Advertisements

Advertisements in the Gelderlander
Advertisements de Brug
Advertorial in international magazine Sustain
Social media commercial with gnomes: 'Grollen'

Magazines and websites

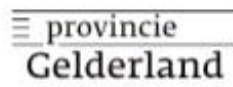
Nijmegen European Green Capital Magazine
<https://jaaroverzicht.greencapital2018.nl/en>
<https://greencapital2018.nl>
<https://www.greencapitalchallenges.nl>

Other

Green routes
Alternative chain of office
Powerpoint presentations

3. All partners

SPONSORS AND PARTNERS



Sponsors of the visitors' pavilion

Comdis Europe; Grohe Nederland BV; LvdH, MHB BV; Ney & Partners BXL sa;
Koffiebranderij Peeze; Relius Benelux; Sarens Nederland BV.

Friends

Royal Smit Transformers
Centralpoint Nijmegen B.V. (voorheen Scholten Awater)

4. Jury report

Jury report – Jury findings (p. 3)

Nijmegen presented a passionate, clear and persuasive vision of their city as a Green Capital winner, and of how they would act as an ambassador for the green city movement across Europe if they were to win the Award. The jury was impressed by Nijmegen's engagement of a wide range of stakeholders from the city.⁴⁰

The city's ambitious, well structured, presentation showed not only their concrete ideas for their future as European Green Capital, but also their ability to deliver them and their willingness to invest time and effort into the initiative, s (City Panel, 2019)ould they win. The Jury also appreciated the engagement from the city's residents, who clearly have the concept of a greener city rooted in their values and vision. Nijmegen has already mobilised its residents for 2018 and has the clear ability to inspire other cities as a role model.

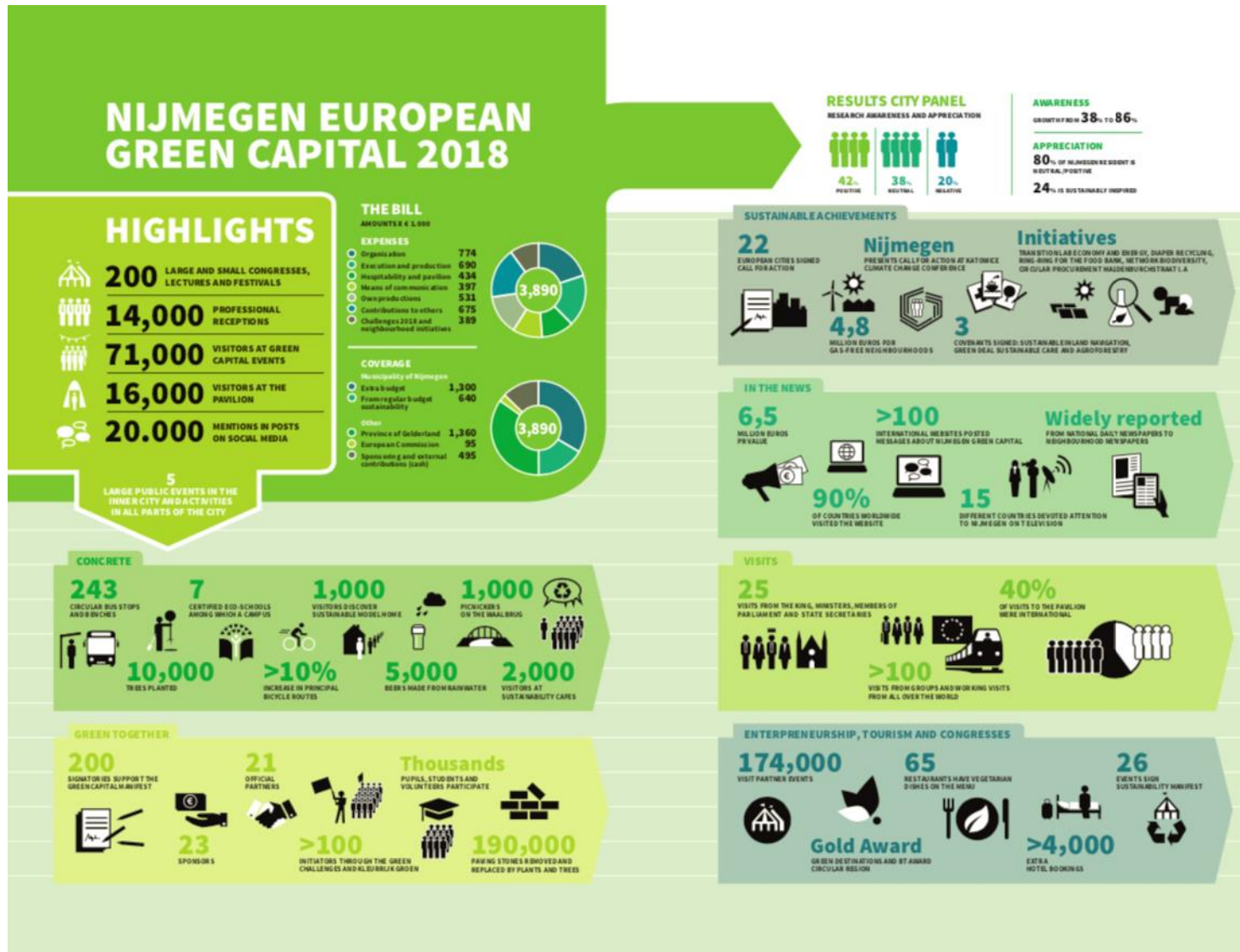
The Jury was also impressed with how the city showcased and presented their strengths, including on cycling infrastructure, traffic organisation, and clean public transport, as well as their excellent approach to waste management. The city also framed the strategic plan well within the wider EU level and global sustainable urban agenda.

Jury report – Jury conclusion (p. 5)

The jury would like to commend each of the cities shortlisted for the 2018 European Green Capital Award for their excellence demonstrated across a number of the environmental indicators. Concluding its deliberations, the jury decided to award the title of European Green Capital 2018 to Nijmegen. The European Commission looks forward to working with Nijmegen.

⁴⁰ http://ec.europa.eu/environment/europeangreencapital/wp-content/uploads/2016/05-2016/egca_2018_technical_assessment_synopsis_report.pdf

5. The infographic



6. Interviews project managers

Interview 1: Report interview process manager GC and programme manager D.

Friday 16 November 2018

(Klaas Pruijsen, O&S)

12 pm - 2:15 pm

Interview conducted by Pieter Leroy and Nanda Kurstjens RUN

Looking back, the main ambitions were:

1. Strengthening own sustainability policy,
2. Influencing society (the world) and
3. Improving Nijmegen's brand recognition (PR, city marketing).

Strengthening municipal sustainability policy

This was achieved, thanks in part to our awareness of the government's role, the responsive government. Mainly looking for energy in society. Partly due to budgeting limitation, but also because it is a powerful approach. "Responsive" also involves strengthening and complementing, for example by visiting smaller projects. The aim was not a collection of activities, but rather a broad societal movement. Examples: churches joined in; a film festival like Go Short drew attention to sustainable management in that sector.

The reach of our policy is significant, but its effect is subtle. The already large circle around the challenges was expanded. But it is still reach within the same bubble. The path to the neighbourhood has been found, but mainly by the Green Challenges and Steenbreek. It might be scantily, but the door has been opened. 25 advisors have been trained (at a practical level) within Kleurrijk Groen. These are the "non-Western elite", which is a good point of entry into this community. Every day, people present ideas through the website. The visitors' centre receives many questions.

Focus was on responsive action (receive and amplify signals, provide a stage) and "positive framing". But several (hard) choices we also made in relation to four transitions:

- energy transition (take off)
- mobility (take off)
- circular economy (initial phase)
- food transition (CO₂-related, increased offer, urgency, awareness. Challenge: vegetarian route for catering. Food forests, Landgoed Grootstal initiative)

City marketing Nijmegen

The first impression of media communications (by Clip it) is sensational, with a global reach and high PR values.

Influencing society

Examples of results:

- Movement in sustainable inland navigation, joint lobby towards Europe, together with sector.
- Use of the Engie grounds, awareness of use of space by solar fields. Companies challenged to make double use of space, which leads to pilots involving growing crops beneath solar panels.

Nijmegen as "role model":

- More so than other cities, we put people and their story first. We use the energy from the city.
- We keep calling for attention to bottom-up green movements (in cities), to see national and international transitions through.
- Mainly in networks, both local and international.
- Impact: visiting cities (customised receptions), contacts, exposure is strongest in Europe, e.g. Environment Committee European Parliament, Benelux, Flemish, German and Portuguese regions, city of Brussels.
- Test of efficiency: requests such as from Rio were mostly denied.

- The call for action (climate summit Katowice) with 18 cities is a kind of end station. Nijmegen will/has put its mark on this with a “Dutch Approach”. Empowering cities (to be able) to let citizens live sustainably. As a role model, draw attention to the responsive government as leader of a green mobilisation. Katowice was about climate issues but was expanded to include biodiversity and circular economy.

Mobilising the population

Has an energetic society been promoted, a responsive government?

- GC was originally mainly meant for professionals; we were the ones to partially link to that the wish to reach the city. If that had been the main goal, then we should have organised a different year.
- Even though the overall figures are good (and we have achieved more than expected): we are only now getting to the intricate details. Football team NEC playing in green shirts and GC videos being shown during the break are just the beginning.
- The bottom layer of society is difficult to reach. There are mainly possibilities via children, through school. This has regularly been the point of entry. Sometimes via employers or corporations.
- The role of corporations was good to excellent: multiple processes and projects, performance agreements, conference in the Honig.
- When actively approached, groups participated. We could have chosen this approach more often, for example by involving sports clubs (canteens).
- The municipal council provided additional resources for sustainable actions in neighbourhoods. These form a primary GC effect.
- Despite lacking government grants, we were still able to strengthen initiatives. A subsidy factory would have created a very different feeling.

Considerations and experiences

During the implementation of GC:

- We focused more on what was possible than what wasn't. For example: making the city greener (Steenbreek) is a beckoning perspective, that is backed by climate goals.
- Thinking in blueprints was quickly moved to the background. Let initiatives reach you, embrace. This improvisational approach did not really have any drawbacks. Great things were achieved without resources.
- The expected government funding was not disbursed. In short, argumentation was ‘no money for parties’. Although this is about creating a movement, a necessary instrument to take the population along in transitions. In hindsight, the State underestimated the impact of GC.
- Careful attention was given not to push away existing initiatives. The alderperson (and her party, Groen Links) also knowingly did not claim GC. To offer the city space.
- The GC organisation is a high-performance team, with a lot of inspiration, a joint flow, output exceeding expectations. The 34 volunteers are part of the family.

Yield, continue

- The GC year is the start of a green wave. The sustainability network continues and will enter neighbourhoods and regions. New movements and knowledge shares arose in the areas where they were previously absent: green & climate, circular economy and food & health.
- A truly durable icon is lacking, which is a pity.
- There are direct benefits to visitors and professionals, and for the city in terms of media attention.
- Creating a new movement, a necessary instrument to take along the population in transitions, worked out better than expected.
- Advisory Board (30 people) will get a fresh start, for example as programme board with a regional component.
- Programme “Wijken in actie” will continue.
- GC challenges will hopefully continue.
- Continue projects in the areas of energy and circular economy. These were also given a boost.
- New networks sometimes automatically replace old ones.
- The “green-blue grid” could become a movement on subjects such as biodiversity, short food chains, healthy landscape.

- “Biomonitoring” by the RUN department has received high exposure.
- Impact on industry varies. ARN and Engie revealed themselves to be loyal partners. A LED lamp distributor (Green Cross) chose Nijmegen as place of business because of GC. Picknick, Hyster, BCTN and initiatives such as electric taxis tagged along well. Rabobank chose Nijmegen for a new regional office, because of the strong connections of societal networks (social, economic, sustainable).
- The connection with the region turned out to be (more) difficult; it proved to be mostly a year of the city. Collaborations with relation to green routes (a regionally oriented initiative) did not lift off. However, neighbouring municipalities showed inspiration, and there was a joint process of purchasing green energy (which was technically already running). Arnhem showed some envy (did visit Nijmegen as GC, collaboration at Rijn-Waalpad).
- A clear wish to find a new point on the horizon, to have a new goal with stature. This is also possible as region or province.
- Ideas regarding recording legacy: one-year report, figures, testimonials given through “scrolly telling”, a glossy magazine.

Interview 2: Report interview Margot

Tuesday 6 February 2018

10 am - 11:15 am

Role - Green Capital Challenges

Her role and involvement are not clearly defined. She was initially involved as a volunteer in a workgroup, together with Jan (former alderperson) and Yvonne Keijzers. As an involved resident, she joined the trip to Ljubljana. The involved residents who went had the approach: ‘We aren’t Green Capital if we fail to reach all residents’. This was the starting point of the Green Capital Challenges. For the residents, in addition to the activities organised by the municipality. Civic participation is important! Margot Ribbering is on the Green Capital Challenges board with the theme: water.

Operation Steenbreek

One of the projects she’s involved in is Operation Steenbreek (through Green Capital Challenges). She wants to get residents moving. This is a project that will probably take some time but which she is tackling together with a team/government/industry etc. The kick-off could be this year.

A network of companies/municipality officials/volunteer network/education (ROC/HAN/RU) who all participate. (The question is: who holds responsibility? No one fully does. It really depends on motivated individuals.)

Her message and vision: Everyone knows we should live sustainably and that it is important to do so, but we don’t do it. She wants to do more than just spread information among people; she wants to enter discussions with them. Give them a positive nudge to enable behavioural change. This will eventually make the city climate-proof.

How does she intend to do this? Through Operation Steenbreek. It is aimed at making the city greener.

Cities are a challenge, as they are mostly stone. This is why a change needs to take place to make cities more climate-proof as well. There is heat stress, intense rainfall and flooding.

But does that happen? It takes a lot of time. Everyone is busy. People agree sustainability is important, but everyone is asks for clarity. Strategy: Visit people. Find something that draws people. Organise resident meetings.

The municipality makes things easier by offering subsidy schemes, and they facilitate it by visiting and taking care of practical matters. People should now simply do it. But that is a slow process. “Reaching” people is a great challenge!

The Steenbreek organisation now lives toward events. The municipality makes a campaign team available for these events. The next one is on 14 March, the tree-planting day.

“Reaching” people

Challenge: it’s a custom job. What moves people? That is different for everyone. Are there general trends to get people (from all groups) moving?

A solid provision of information without vague terminology.

Mainly: talk to people about where their concerns lie.

Social stimuli: it should become natural; doing something sustainable should become the standard for a given group.

There is a green, white elite. There just is. But we need a group to set things in motion, one that wants to involve people. Participation is an issue in itself. There should be more collaboration.

Kleurrijk Groen

From the point of view that green should be more colourful, we started Kleurrijk Groen (‘Colourful Green’): a collaboration between Bureau Wijland, Wij Zijn Nijmegen and Green Capital Challenges. A meeting conference was held in which sustainability was divided into 13 themes (waste, energy, water, etc.) to discuss: what is happening and what could arise around these themes?

The goal is to let things arise bottom-up. Mainly listen.

This resulted in 10 project groups with people with a migrant background to start projects. Bottom-up!

What will it yield?

It is positive regarding connecting municipalities. One of the outcomes is an increase in social sustainability and integration (a start thereof). If that happens around the theme of sustainability/green, the yield will be significant.

There is little collaboration between Green Capital Challenges and Kleurrijk Groen. GCC: it’s too slow, we could strengthen each other. But Bureau Wijland fears that it will impede the bottom-up growth, and instead it will be from the “green, white elite” who are afraid of being overshadowed.

However, there is a thinktank with Bureau Wijland, Margot and others.

Example: A Turkish Sunni group decided to make their gathering building greener through insulation/green roof/etc. This could be used as an example. “Apple pie discussions” are also held, where people can talk to experts regarding living an energy-efficient life.

General

Who guides the entire process? Who is leading? It is still an initial phase. We can achieve much with knowledge! Psychologists and sociologists can help increase civic participation.

80% of the energy should be put in: implementation.

Ideas for research

- Join in on the Kleurrijk Groen thinktank during meetings. Look in on project groups? Arrange through Sarah!
- How can the network be regulated better... What would be a good guiding role for the municipality?
- But also: how can the bottom-up process be facilitated? How can we reach more people?

7. Effects described per indicator

Indicator 1 Mitigation and Adaptation

Indicator 11 Energy performance

Where are we now?

The Municipality of Nijmegen has taken great steps the last year in this indicator field. Energy transition and climate adaptation were already high on the political agenda. In 2018 a whole new team was set up for the energy transition of neighborhoods. Four coordinators were installed under the super vision of a process manager. Main focus at the moment is how can we realize that the first three neighborhoods will be “fossil-free” (Van het Gas los) in the future. At the same time we are planning to expand our existing heat network (in the new city north of the river Waal) with a second heat network to the new developments south of the river (Waalfront) and later to the rest of the city, especially the areas Dukenburg/Lindenholt and the University Campus.

Together with the surrounding cities a contract is signed for our own demand as public governments for renewable energy. A local energy supplier is contracted that promises that all the needed energy will come from local sources. Our cooperative Windmill company is building a big solar field in 2020 also funded with private money of residents. The energy company Engie, who exploited the former Coal fired Energy plant (which is now being destructed), is planning to build a solar field of 60 hectares at the municipal border. Also two wind mills are planned on their premises. For the near future we are surveying the possibilities for other renewable energies supplies like deep Geothermal energy and energy from surface water.

In our region the Water Authority Rivierenland, the Province of Gelderland and Nijmegen and surrounding small cities have worked together on a Regional Adaptation Strategy the last years. This RAS is in March administrative adopted by all the boards of the public governments. Now we are working out the regional and local measurements programs. In Holland we are one of the first regions that is so far in the process of making the cities and region climate proof. The National Delta Program shows us as a fine example of working on climate adaptation.

Benefits from the Green Capital 2018 Year for Nijmegen

Climate mitigation and adaptation are very important themes for the city. Not only for the municipal government, but also for many stakeholders. In the whole five years of the Green Capital application procedures and the year itself in 2018 we closely worked together with the Province of Gelderland, the Energy company Engie, the Residents Cooperative Windpower Nijmegen and the Water Authority Rivierenland. This close cooperation is also paying out in all the new projects that we have started recently. Communication between the partners runs very smooth and we see easier the benefits of working together then working next to each others. Good examples are easily shared in the networks that were raised in those years and we also get more national recognition.

Indicator 2 Local Transport

Where are we now?

Nijmegen is working together with the Region Arnhem Nijmegen on Smart and Clean Mobility. The bicycle always played an important role in this. We developed a regional network of fast cycling routes and the amount of users has grown with an average of 30% in three years. The Rijn-Waal path between Arnhem and Nijmegen has even seen a rise of 45% in usage.

We have invested a lot in behavioral change, both via inhabitant as via employers. Because the old Waal bridge has to be maintained, the capacity has decreased to less than half. People get rewarded when they travel by another mode of transport (bus, bicycle) or travel outside of peak hours. From September 2018, the educational institutions at our University campus (Radboud University and HAN University for applied sciences) have spread the starting time of their colleges, to spread out the peak hours in order to relieve the crowded roads, bicycle paths, buses and trains.

Last year we worked on a new ambition document for mobility, because our policy plan is outdated. The new policy is an integral policy, based on the four challenges we face as Nijmegen: Attractive City, Sustainable City, Economic resilient City, Social and healthy City. We prioritize active and sustainable mobility. Electric shared mobility will play an important role in offering an alternative for the polluting individual cars. The planning is that the board of Nijmegen will release this vision in June 2019 and that the city council will approve in September.

Benefits from the Green Capital 2018 Year for Nijmegen

Sustainable mobility is an important topic. The Green Capital year has helped us to get better understanding about and support for the implementation of measures for sustainable mobility. We took one lane for cars off the Graafseweg and changed it into a cycle path, because there was no possibility to add more space for cyclists, although we wanted to improve the quality for cyclists.

The way we organized the European Mobility Week in 2018 on a large scale, with a week full of activities, was very helpful. We started with a big event on our Waal bridge (before the maintenance started): a vegetarian lunch for 1.000 persons on the bridge, followed by games, music, information and theatre. There was a lot of national press-coverage and it helped us to gain attention for all the other activities.

We were asked to participate in the application for a Interreg NWE subsidy for e-HUBS: hubs where different kinds of electric vehicles can be rented. This was successful and now we will create ten e-HUBS in Nijmegen and three in Arnhem.

The Ring-Ring app, an app that monitors the amount of kilometers you bike, so you can save money for a local good cause, was implemented in 18 municipalities in the region Arnhem Nijmegen because of Green Capital and will likely be continued.

Electric cars were stimulated, we saw a rise in the demand for charging infrastructure. Mobility as a Service was implemented at the university campus Heyendaal. The bike use increased with 13%. We invested a lot in behavioral change campaigns that led to an increase of commuters that use the e-bike instead of the car, or people that use the car outside of peak hours.

Indicator 3 Green urban areas

Where are we now?

The most important success of the Green capital year was the launching of our Green campaign “Breaking the Stones” (Operatie Steenbreek). This is a national campaign which more and more municipalities joined now. In Nijmegen we focus more on greening the public space then greening the stony gardens (for which the campaign was started). On Tree Plant Day in March 2018 on forty primary schools 2000 pupils planted 6000 fruit trees and shrubs and hedge plants. More then 13.000 tiles were removed and turned into green. This campaign was led by the new Nature Education and Cultural Historical Centre De Bastei. This building was opened in 2018 and is also a museum were our 2000 years of history are shown. Many other greening projects were established mostly in stony, low social areas. Those greening projects together with the

residents also improve the social cohesion of these neighborhoods. All together in 2018 180.000 tiles and stones were removed. Two new pocket parks are realized, the quay on the South side of the river is turned over into a green recreational space. Also a new Green Network has been established and we work now much closer together with the green organizations in town. And also the health organizations know now how to find the civil servants in the physical domain.

Together with knowledge institutes we are surveying the benefits of green surroundings of houses for the health of the residents. We are exploring the possibilities for green school yards and for vegetable gardens in every primary school. Together with the Institute for Nature Education we will realize four Tiny Forests together with primary schools and residents.

In 2018 Nijmegen organized the European Agroforestry Conference (EURAF). Since then agroforestry and city agriculture became more important in Nijmegen, although we do not have a rural area. Several Food Forests were realized as well in Nijmegen as in the surrounding areas, lying in other municipalities. Other examples of Nature Inclusive Agriculture have been started up, like Community Shared Agriculture, food areas for badgers, and a campaign for fruit trees in backyards of residents.

Benefits from the Green Capital 2018 Year for Nijmegen

The green side of climate adaptation regarding coping with heat stress has now become an important topic in town and in the municipal organization. The new developments north of the river Waal will be realized much more sustainable than we would dreamed of five years ago. Climate mitigation and climate adaptation were already important. This year we decided that in 2020 nature inclusive buildings will be obliged in the new developments and also Biodiversity has to be regarded.

During the whole five years of the Green Capital application procedures and the year itself in 2018 we closely worked together with the Radboud University and Radboud University Hospital. They have now installed a new director on sustainability and students are organized in the Green Office. They are making plans for a greener campus as well for the employees and the students as the patients.

Without being a Green capital this would have not happened.

Indicator 4 Nature and biodiversity

Where are we now?

Nature and Biodiversity are important themes for the municipality Nijmegen. But Nijmegen is a compact city without a rural area, so most of the green and nature around the city belongs to other municipalities. But some of the forests are owned by Nijmegen, due to historical reasons. Our Green policy Plan was old (2007) and needed new views. Because of the Green Capital initiatives and the Green capital year we are working now close with the Radboud University. And on their campus most of the Dutch Nature Monitoring organizations are housed in the building called Nature Plaza. In 2018 we gave them a contract to visualize on maps all important (endangered) species, and also some ambassador species. With the latter category we want to start up in 2020 resident science projects about nature monitoring and nature awareness projects together with the scientific world. They also will start up the process to make a Biodiversity Plan.

In Nijmegen-North another biodiversity project is launched, a Species Management Plan (SMP). Because we are developing a whole new city area with 10,000 houses we have to focus also on the National Nature protection Laws. Normally every small project had to investigate if there would be endangered species in the area, and that is now not necessary anymore. Because of the SMP we have got a general permission of the Province of Gelderland. For getting that permission, we have surveyed where all the endangered species are living and we have made a plan how we can help those species in advance by not only protecting their habitat, but also expand that habitat with 50 hectares of green spaces. Also the obligation is agreed in the SMP that from next year on all new buildings have to be build Nature Inclusive.

Benefits from the Green Capital 2018 Year for Nijmegen

The projects mentioned above would not have been established without the Green capital year. No budget would have been targeted to those projects. And more important is the “Green Vibe” that we see in our own organization. Not only the city developers and landscape architects are more and more convinced of the necessity of greening the city as a reaction on climate change and degradation of Biodiversity. Also internal

and external project developers have a different mind set partly due to all the congresses and activities in the Green capital year.

Indicator 5 Ambient Air Quality

Indicator 6 Quality of the acoustic environment

Where are we now?

Although the air quality is not bad in Nijmegen, we keep on going to improve it. One of the highlights in 2018 was an international conference in Nijmegen on clean inland shipping. Nijmegen takes part in an European project called Clinsh and on the conference on the 12th of April a covenant was signed about clean inland shipping transport by the National Government, provinces, municipalities and companies. In this Declaration of Nijmegen the subscribers promise to reduce the CO2 emission in 2030 through cleaner ships (there will be build electrical ships) and greener ports (shore power).

Another action that is running in Nijmegen is to realize an Environmental Zone in the city in order to reduce the emissions of older cars and transport vehicles. We already have a restriction in the centre of Nijmegen, with our pedestrian zones and the down-town area only accessible for inhabitants. But now we are planning to have an Environmental zone for the whole city.

Also in 2018 the decision was taken to stop having busses driving through the centre of Nijmegen, the former main street. Although all busses already use Biogas as a fuel, this measure will improve the liveability of the centre where all the shops and restaurants are. This is as well an air quality issue as a noise issue. Both will be improved.

In the west of the older town a new traffic bridge was build, which distracts more and more cars from the old route alongside the city center who drove over the old traffic bridge. But this new route brings more annoyance to the neighborhoods in the west. Together with the residents and NGO's a platform "West will need a green Buffer zone" was installed years ago to discuss and follow the way this new road and bridge would be used. An agreement between the parties stated that there was a Million Euro's available for measures in case that there was too much annoyance of the new roads. In 2018 the monitoring proved this need and therefore in 2019 started the project to take measures. Extra green will be planted and noise reduction measures will be taken. Also two of the Tiny Forests will be realized alongside the new road.

Benefits from the Green Capital 2018 Year for Nijmegen

Thanks to the Green Capital year it was possible to organize such an international conference as Ports&Cities in Nijmegen. Normally this would be held in Rotterdam, one of the participating municipalities in the European project Clinsh. For the acoustic environment there was no real effect of the Green Capital year.

Indicator 7 Waste production and management

Where are we now?

Nijmegen is one of the bigger cities with the highest rates of recycling of waste in the Netherlands and therefore in Europa. We almost reached the European standard of 75% recycling. Therefore, doing much more is difficult. But every year we try to set up a new recycling measure. We are now experimenting with the collection of diapers. In 2018 we took the decision of installing underground waste collection containers in the city centre. This will improve the recycling rate in the city centre (always difficult due to the fact that the apartments have no space for small containers). Also this means that it is easier for the trucks to collect the waste with less CO2 emission and less annoyance for the residents in the early morning.

The 'Materials Roundabout' that is being developed at DAR in Nijmegen is one good example of innovation. This location will be used to sort textiles, and electrical devices, and to collect plastic, wood and glass. This will create jobs for people on the lower end of the job market. This is also in line with Nijmegen's policy on poverty, which aims to provide useful and refurbished electronic equipment and refrigerators for low-income households instead of money.

Benefits from the Green Capital 2018 Year for Nijmegen

Our waste company DAR has organized conferences during the Green Capital year. Knowledge dissemination as a front city is very helpful to other (European) cities. In the past DAR also helped to build the big waste recycling Plant in Ljubljana, where they recycle waste with the newest Dutch techniques.

Indicator 8 Water Management

Where are we now?

Nijmegen is lying on the river Waal (the Rhine), the biggest water transport route of Europe. Between 2012 and 2016 we realized a second river in the River Park Nijmegen. This high water reduction measure assures Nijmegen to be safe for future high water levels coming from Germany. A side channel of 4 km is realized, with new bridges, a dike relocation doubled the space for the river. And that all in the middle of the city centre. Also in the Green Capital year many visitors came from all over the world to see this project and hear about the unique residents' process behind it. We give many excursions also to the Green Capital Network participants and many political people. This river park is also a very well visited recreational area, also because a part of the side river is now an official swimming area with controlled water quality monitoring.

In the north of Nijmegen the first lake is now also a recreational area with a beach and an official swimming area. We are now realizing the third lake and the last parts of the sustainable water system in this new development site. Due to the hot and very dry summer we faced very low levels on the river Waal and we had to take a lot of extra measures to insure that the water system in Nijmegen-North will keep on functioning. This environmental Drought Stress test was a good test to see how sustainable the water system in Nijmegen-North would be.

This dry summer was also a very useful test how we would cope with our drinking water supply. The drinking water company has evaluated that summer in 2019 and they still have to work on a better supply and better protection measures. It went well in 2018 in Nijmegen, but this was certainly not so further northeast of Nijmegen or to the south. The provinces and drinking water companies have started up a survey to new strategic ground water supplies in the sandy parts of Holland.

The Water Authority Rivierenland is already for twenty years a partner in our water management. Together we made up our Water Policy Plan in 2000 and now we are working more and more close together on the topic of Climate Adaptation. Since two years they have now a subsidy for measures on climate adaptation which completes our subsidies. They joined our Campaign Breaking The Stones as well organizational as financial. Together we pay the Campaign team, take joint measures and share the communication to the residents and the housing associations. They are also in the lead for our Regional Adaptation Strategy (see indicator 1) and work now not only on their usual themes (too much and too little water), but also on heat stress and residents' participation for a green city.

Benefits from the Green Capital 2018 Year for Nijmegen

In 2018 during the European Green Capital Award ceremony days we organized in Nijmegen on the side river "Spiegelwaal" an open air concert for three thousand people. Also a big public breakfast for 1000 people was organized on the Waal old traffic bridge, which was closed down for the whole day. Two splendid events, that would never be organized without the Green Capital year. Not only because of the year but also because of the better cooperation between partners in this field.

Without the Green Capital year, the process for working together with the Water Authorities on the hemes of climate adaptation and sustainable development would have been on a much slower pace.

Indicator 9 Waste Water Treatment

Where are we now?

Waste water treatment in Nijmegen and in the region is already on a very high level. We have a close cooperation between Nijmegen, the surrounding smaller municipalities and the Water Authority Rivierenland on the topic of waste water management and rain water management. This was forced by national obligations, but it works very well. Besides knowledge exchange we also lower our costs by

cooperation in the working field. The last year we have combined the cooperation on waste water management with the cooperation on climate adaptation. This had in the beginning more benefits for the politicians (busy agendas) than for the civil servants. Because working on heat stress is still a bit far away from water technicians. But by joint political cooperation in the whole adaptation theme we also see that in the smaller municipalities there is now a better internal cooperation between green managers and water technicians.

The fact that we had the last ten years a lot of severe rain showers lead to the idea of developing “Perspectives” for how we should and could change our rain water and waste water systems in the city. Some new parts of the city are already climate proof by having a sustainable sewer system. But what do we do in the older city with a mixed sewer system? Or in the city polder areas with a divided sewer system? It is strange that we develop a view on the future city out of our view on sustainable sewer systems. But because sewers are lying in the ground for 100 year this is also not that strange. The coming transition for renewable energy (get rid of fossil fueled houses), well insulated houses and the mobility transition to use electric cars are all transition that will take place the next 10-20 years. We are now bringing all the ideas and chances together from all transitions. An idea that well fits in the European Green Capital thoughts.

Benefits from the Green Capital 2018 Year for Nijmegen

The Green Capital year had not that much influence directly on waste water management, because we are already on a very high level. But as mentioned before we work much more in an integral way together in the city administration thanks to the Green Capital Application. New aspects of waste water management, for example for delivering renewable energy or heat from waste water, are taken in account in sustainable city development projects. We also look at decentral waste water purification, although that is still in a pilot phase in Holland.

Indicator 10 Eco-innovation and sustainable employment

Where are we now?

We are a learning region, which is developing into a living lab of the future-proof, circular economy. Over the past year, the Arnhem Nijmegen region has put a lot of effort into this. Active stakeholders set up a network with short lines. This enables government bodies, educational institutes, banks, businesses and residents to find each other quickly, share knowledge and learn from each other.

Waste processing company, ARN (a supplier of heat and biogas), in co-operation with the Water Authority Rivierland, will start recycling incontinence materials into biogas, synthetic materials and compost. Other initiatives include setting up a biorefinery. This refinery will reclaim an aromatic called limonene from orange and apple peels for use in the pharmaceutical industry.

De Honig plant in Nijmegen is a hotbed for various small-scale circular initiatives. Stadsboom is a social furniture factory that uses regional waste wood. Dutch Awareness is a company that has developed recyclable polyester fibers from which circular work clothes are manufactured. Be-O BV in Nijmegen is developing a recyclable drinking bottle that is made from sugar cane. Radboud University Medical Centrum (UMC) introduces circular healthcare and are currently creating the first Dutch green operating room. It uses specially developed foil to reduce the amount of waste materials. The hospital also initiated a whole series of circular projects, ranging from the use of green energy to reclaiming drug residues in waste water and switching to sustainably manufactured work clothes.

By the year 2050, the Province of Gelderland wants to be the first waste-free province. In 2030, the use of raw materials must be halved compared to 2016. Important efforts include: circular procurement and new circular business models in industry (metal, paper, textile) by using bio-based materials, like natural fibers, manure and proteins, among others. The 2012 public transport charter provided the breakthrough for procurement as a means to stimulate the circular economy, which the Arnhem Nijmegen region entered into with bus company, Connexion/Breng. Since then, the buses have been driving on regionally produced bio gas or electricity.

Government bodies stimulate circular initiatives and support these, as a:

- purchaser (launching customer)
- competent authority (tackling regulatory barriers)
- financial supporter (Investment agenda)
- promoter annex connector (a catalyst of the knowledge agenda)
- policymaker in the areas of industrial estates and the job market

Financial institutions have set circularity as a precondition for businesses of the future. This effort will also help to attract talented people and ensure corporate social responsibility. Rabobank Nijmegen and Arnhem helps companies, via a circular economy challenge - with business scans to assess their business cases and valorise their know-how. The region has proven very successful at this. A Start-Up Mix and other events have been organised to provide a platform for start-up entrepreneurs. Everyone is involved: HAN University of Applied Science focuses on value creation via its master's program Circular Economy. Businesses and institutes must focus on financial, physical, intellectual, human, social and natural capital

Benefits from the Green Capital 2018 Year for Nijmegen

Without EU Green Capital 2018, the following benefits would never been achieved:

1. The European Green Capital year delivered a movement in society. The title has stimulated the development and implementation of various civil initiatives. As part of the Green Capital Challenges, the Circular Economy model home was built in the district of East Nijmegen, which served as a meeting place for local residents. Urban benches have been manufactured from recycled plastics, which were collected by pupils from the primary school, De Klokkenberg. The mayor now has a circular livery collar.
2. It enabled the strong tradition of thinkers such as Ad Lansink (Ladder van Lansink), he wrote the book *Challenging Changes* and presented it to the European Commission. Jan Jonker, professor of Corporate Sustainability RU, wrote books on Circular Business models.
3. Knowledge is also shared in workshops and festivals. The biggest benefit was the national Circular Economy Festival, that has landed in Nijmegen. It became a tradition to repeat it every year in Nijmegen. Future-proof Community in the Honingcomplex, held on May 2018 and may 2019. This was just one of numerous festivities during the Nijmegen EU Green Capital.
4. Nijmegen was able to talk with the European Commission about policy and Tackling restrictive regulations. The local authority now is helping entrepreneurs with circular initiatives by changing restrictive regulations. Bottlenecks in European laws, such as inability to transport substance flows to test locations in Germany, are being discussed with the Euro commissioner and the European Union.
5. The green procurement in the public space increased. The purchase of furniture and work clothes by municipalities has proven another important step forward. If government bodies take their responsibility by spreading risks, sharing liability and letting go of the focus on standardisation and certification, room will be created for innovation. Concrete plant, De Hamer, uses demolition waste from the local waste industrial processing company to manufacture pavement tiles. In Nijmegen, 10 per cent recycled concrete is used in new concrete pipes; the municipality bears part of the risk. The municipality will also do this for the 3D concrete printed bridges over waterways in the Dukenburg area, because the contractor does not want to bear the full risk of liability. Circularity even plays a role in the procurement of 200 bus shelters.
6. Living Lab Radboud University Inclusive Banking. Developing and implementing a prototype app voor citizens for hybrid banking. Approach is hybrid values (time, waste, mobility etc.), transactions in neighborhoods, use of collaborative crypto-technology, dedicated APPs to facilitate transactions of values, to stimulate a reliable and scalable Peer-to-Peer economy.
Goals: Community empowerment, Capacity building, Stimulate social Inclusivity, Contribute to sustainability and circularity, Contribute to transition Develop a EU-network based on multiplier

Indicator 12 Integrated Environmental Management

Where are we now?

Nijmegen has a Sustainability Policy Plan since 2011. It was an integral plan with four sustainability tracks. In our Green Capital year we focused on five themes which are now also the five tracks for the new Sustainability Agenda: Energy Transition, Sustainable Transport, Circular and Biobased economy, Green and Vital City and Water&Climate Adaptation. Those last two themes were in the first plan joined as “Sustainable City Development”. The first two themes are already for a long time in the picture and have bigger budgets and greater personal capacity. Therefore, we give the coming years more attention to the other three tracks. The networks that are formed in the Green Capital years for transforming the city into a greener and healthier city, for the regional Climate Adaptation Strategy and for the regional Circular Economy Strategy will continue to guarantee a better liveable city. We are now setting up a new Measures Program with funding for the coming five years.

Benefits from the Green Capital 2018 Year for Nijmegen

Nijmegen has changed from a front runner city in the Netherlands into a front runner city in Europe. We are working together with the other European Green Capital Winners and Finalists in the newly set up Network Program. The first network meeting was held in Nijmegen during our year, the second was recently organized in Umea. Meetings will follow in Copenhagen and Ljubljana and Nijmegen will keep on visiting those meetings and work further on knowledge dissemination.

8. Guestbook examples

7-year old: "We should plant more flowers".

Visitor: "All hospitality in Nijmegen should ban plastic, especially straws".

2 kids: "When we play outside we should collect the trash we encounter".

Visitor from Lisbon: "I will take some great ideas with me for the 2020 Green Capital!"

Visitor: "Leave the visitor pavilion where it is."

