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*Publication date:*  
2018

*Document Version*  
Publisher's PDF, also known as Version of record

[Link back to DTU Orbit](#)

*Citation (APA):*  
Godskesen, B., Philipsen, L., Nielsen, K., Neergaard, B., Kærn, V. A., & Mikkelsen, P. S. (2018). *WISE innovation in urban water systems of Copenhagen*. Poster session presented at IWA World Water Congress & Exhibition 2018, Tokyo, Japan.

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# WISE innovation in urban water systems of Copenhagen



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## INTRODUCTION

In August 2015 the WISE project was initiated with the goal to increase development in urban Water systems in the Capital Region of Denmark through 24 Innovation cooperations between researchers from the Technical University of Denmark (DTU) and Small Medium Sized Enterprises (SME) (the WISE project). The WISE project is a prime example of matchmaking of researchers and enterprises, introduction of the newest knowledge into SME innovation, and creation and improvement of new smart products to the market.

The WISE project is hosted by the Water DTU Center, CLEAN and DTU Scion.

The project is anchored in the Water DTU Center and is running for 3 years. Due to the success of the innovation cooperations a 2 year extension and another 16 innovation cooperations have recently been granted.

The WISE project is funded by the European Regional Development Fund and The Capital Region Denmark and has a total budget of € 3.3 million.

## METHODS

Figure 1. The WISE project consists of 3 main activities:

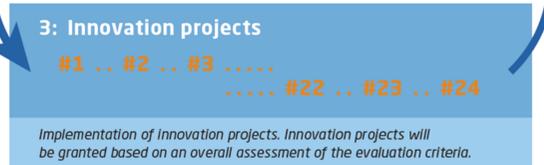
**Main activity 1**  
Water DTU center, CLEAN and Scion DTU identify potentials and needs of SMEs.



**Main activity 2**  
The Water DTU center matches SMEs with researchers. The Center is situated on campus giving directly access to researchers.



**Main activity 3**  
The specific innovations projects are bringing the innovations and research into life supervised and facilitated by the Water DTU center.



The Innovation projects are monitored and evaluated for their performance on output indicators, see example of the evaluation in Results.

## RESULTS

The main results of the project are:

1. There is a great interest in cooperation between SMEs and researchers. However, it was experienced that main activity 1 and 2 (identification of SMEs and matchmaking) was more time consuming than expected when setting up the WISE project.
2. It is possible to go far into the desired research of the SME even though the average WISE project only consists of 11 months of research either full or part time. Research is transferred to the SME efficiently, mainly because SMEs have strong learning cultures (Bamberry et al., 2015) and the research targets a specific need.
3. When evaluating the performance of the innovations projects on the output indicators it appears that the individual project typically has strengths within one or few indicators (Fig. 1).

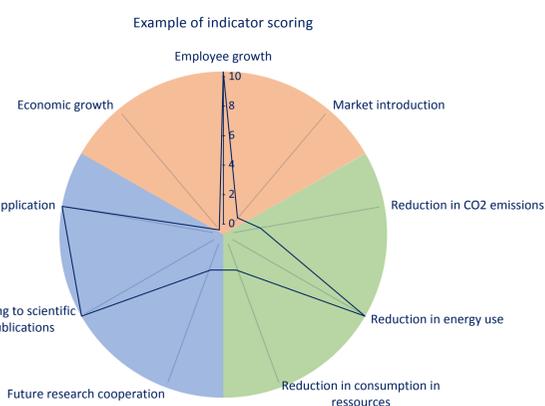


Figure 1. Example of a WISE Innovation project scored according to the outputs defined by the EU Regional Development Fund (Fund et al., 2014), The Capital Region Denmark and the Water DTU Center.

## DISCUSSION

Table 1. Time line of the 24 WISE innovation projects. The left number in the bar is number of research hours granted the individual innovation project and the right number is duration of each project.

SME name	2015			2016			2017			2018							
	aug	sep	oct	nov	dec	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec
BioGas			400			5											
Bycicular						590											
UHT Water						800											
Tejestejn Vandkøkken							370										
2020VIS								350									
Audubig									220								
WaterBov										200							
DryGuard International											1000						
Archiland										240							
Wavegation											850						
Aquasarin												900					
MASH Biotech													750				
Sean Unic														800			
Clit Aqua															200		
Lager																900	
Havsans																	1000
Kumulat I/S																	900
Water ApS																	300
MaCom																	600
Dronemission ApS																	1000
ArtTech																	800
FlowLoop																	680
M&E																	1000
Tredje Natur																	780

- The time line of the 24 innovation projects shows a long upstart phase before it leads to initiation of projects and that half way through the project lifetime a breakthrough occurred in terms of a strong increase in granted innovation projects (Table 1).

- Informing networks about the project, identifying SMEs and contacting them, as well as creating the administrative set-up took longer than expected. It is important to allow time for this start up phase to emerge.

- The overall WISE project covering 24 innovation projects score on all defined outputs with a relatively large variation (Fig. 2) confirming that they have individual strengths within one or more output indicators as illustrated in Results (Fig. 1).

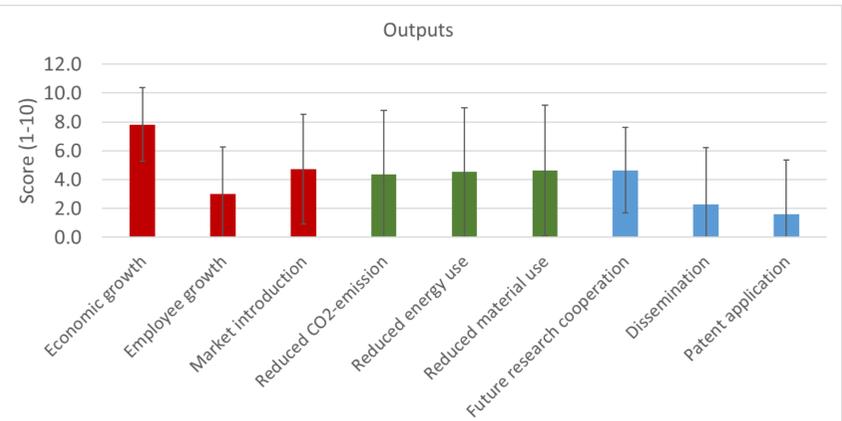


Figure 2 – Average scores of the 24 innovation projects on output indicators defined by the EU Regional development fund and the Capital Region Denmark within 3 overall themes: a) Growth and job creation; b) Green indicators; and c) Future cooperation and publications.

## CONCLUSIONS

The key learnings from the WISE innovation projects are:

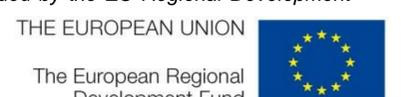
1. There is a great interest in cooperation between SMEs and researchers. However, it was experienced that the matchmaking process, matching the researchers with the SMEs, was more time consuming than expected when setting up the WISE project.
2. It is possible to go far into the desired research area of the SME even though the average WISE project is relatively short. In the innovation projects research is transferred to the SME efficiently, mainly because SMEs have strong learning cultures and the co-operation with the researcher is requested and appreciated.
3. When grouping the output indicators it is found that the individual project typically has strengths within one or few indicators. The overall WISE project covers 24 innovation projects together contributing to all the outputs.

References: **Bamberry, G., Matanagh, S.S., Duncan, G., 2015.** The impact of a learning culture on organisational change in regional SMEs. *Int. J. Learn. Chang.* 8, 1; **Fund, E.C., Regional, E., Fund, D., 2014.** The programming period 2014-2020 - Guidance document on monitoring and evaluation.

The partners in the WISE project are:



Acknowledgements: The WISE project is funded by the EU Regional Development Fund and the Capital Region of Denmark.



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