

EiCLaR bulletin

CL:AIRE's EiCLaR bulletins describe *in situ* bioremediation technology developments and tools created within the EiCLaR project. This bulletin provides an overview of the EiCLaR project.

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Enhanced and Innovative *In Situ* Biotechnologies for Contaminated Land Remediation - a project overview

1. INTRODUCTION

Enhanced and Innovative *In Situ* Biotechnologies for Contaminated Land Remediation (EiCLaR) was a project funded by the EU and China. It ran from January 2021 until the end of 2024 and was composed of the 13 EU and 5 Chinese partners listed in Table 1.

The project was coordinated by Professor Timothy M. Vogel at the French National Centre for Scientific Research and Professor Xin Song at the Institute of Soil Science, Chinese Academy of Sciences. EiCLaR has developed scientific and technical innovations for the following four *in situ* bioremediation technologies for the efficient and cost-effective treatment of a range of environmental pollutants (solvents, metals, hydrocarbons) (Figure 1):

- electro-nanobioremediation (ENB)
- monitored bioaugmentation (MBR)
- bioelectrochemical remediation (BER)
- enhanced phytoremediation (EPR)

The broad goal of EiCLaR was to enhance performance levels through fusion of different *in situ* bioremediation technologies with non-biological processes and to expand the range of applications to industrial sites that contain complex, high concentration pollutant mixtures.

A decision support tool (DST) was also developed in the framework of EiCLaR to help remediation companies, site owners and administrative actors choose the most suitable remediation technologies for their sites. The DST is available to use at <https://contaminatedland.info>.

The aim of this bulletin is to provide an overview of the EiCLaR project and its main results. It provides links to other EiCLaR outputs where a greater depth of detail can be found for a range of stakeholders.

Table 1: Project partners.

French National Centre for Scientific Research, France
r3 Environmental Technology Ltd, UK
DVGW-Technologiezentrum Wasser, Germany
VEGAS: Research Facility for Subsurface Remediation, University of Stuttgart, Germany
Photon Water Technology s. r. o., Czech Republic
Luleå University of Technology, Sweden
Technical University of Liberec, Czech Republic
SPAQUE, Belgium
CL:AIRE, UK
Dutch Sino Business Promotions, The Netherlands
BoSS Consult GmbH, Germany
SERPOL, France
EKOGRID Oy, Finland
Institute of Soil Science, Chinese Academy of Sciences, P. R. China
Shanghai Jiao Tong University, P. R. China
Zhejiang University, P. R. China
China University of Geosciences, P. R. China
Guangzhou Institute of Geochemistry, Chinese Academy of Sciences, P. R. China

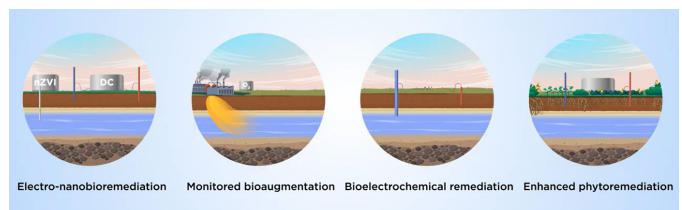


Figure 1. Schematics of the four EiCLaR technologies.



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For more information on the EiCLaR Project, please visit: www.eiclar.org

If you would like information about other CL:AIRE publications please contact us at the Help Desk at www.claire.co.uk

EiCLaR bulletin

2. PROJECT RESULTS

For more information about the EiCLaR project visit eiclar.eu where you can find the following additional resources:

Introductory video (EiCLaR in a nutshell) – a short video explaining the project (Figure 2). View at eiclar.eu/category/videos/

EiCLaR in a nutshell



Figure 2. EiCLaR introductory YouTube video.

Animated explainer video – an animation aimed at a general audience to provide a broad understanding of the four EiCLaR technologies (Figure 3). View at eiclar.eu/category/videos/



Figure 3. Screenshot from the EiCLaR animation.

Podcasts – interviews with some of the main people working on the EiCLaR project to find out a bit more about their backgrounds, how they got to their current positions and their role and activities within the project (Figure 4). Listen at eiclar.eu/category/videos/

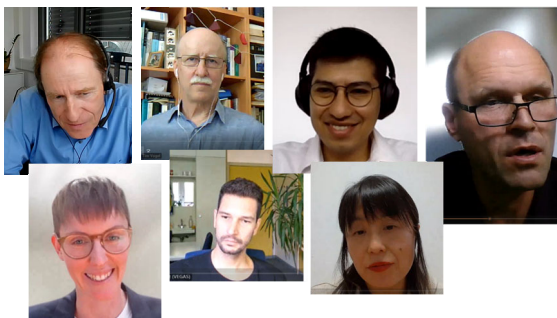


Figure 4. Interviewees from EiCLaR podcasts. (Clockwise from top left) - Andreas Tiehm, Timothy Vogel, Azariel Ruiz-Valencia, Petr Kvapil, Kim Johansson, Simon Kleinknecht and Xin Song.

Technical bulletins – a series of documents describing the four EiCLaR technologies and DST in more detail (Figure 5). Download from eiclar.eu/library/

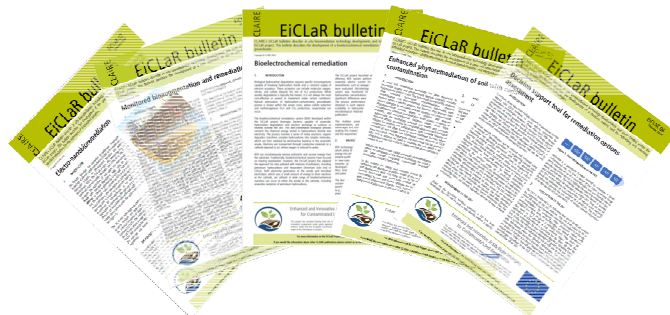


Figure 5. Five technical bulletins of the four EiCLaR technologies plus the DST.

Education pack – a short, illustrated interactive pdf to help engagement with schools, specifically students in post-16 education and aims to improve and promote a broad understanding of the project and its relevance (Figure 6). Download from eiclar.eu/library/



Figure 6. Content of the EiCLaR education pack.

White papers – a technical briefing note for each of the EiCLaR technologies, targeted to different practitioner audiences: for site owners / managers (including real estate developers), for regulators, for service providers and for environmental service procurement personnel. Download from eiclar.eu/library/

List of journal papers published in peer-reviewed scientific journals – these outputs capture the most technical aspects of the research and are fundamental to demonstrate the quality of research being undertaken. View list at eiclar.eu/library/

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