Author's Accepted Manuscript

Australian uranium industry climate change vulnerability assessment

J. Pizarro, B. Sainsbury, J. Hodgkinson, B. Loechel



 PII:
 S2211-4645(16)30344-X

 DOI:
 http://dx.doi.org/10.1016/j.envdev.2017.06.002

 Reference:
 ENVDEV355

To appear in: Environmental Development

Received date: 28 December 2016 Revised date: 3 June 2017 Accepted date: 5 June 2017

Cite this article as: J. Pizarro, B. Sainsbury, J. Hodgkinson and B. Loechel Australian uranium industry climate change vulnerability assessment *Environmental Development*, http://dx.doi.org/10.1016/j.envdev.2017.06.002

This is a PDF file of an unedited manuscript that has been accepted fo publication. As a service to our customers we are providing this early version o the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting galley proof before it is published in its final citable form Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain

Australian Uranium Industry Climate Change Vulnerability Assessment^{*}

J. Pizarro^{a*}, B. Sainsbury^a, J. Hodgkinson^b, B. Loechel^b

^aDepartment of Civil Engineering, Monash University, Melbourne, Australia.

^bCommonwealth Scientific and Industrial Research Organisation (CSIRO), Energy, Queensland, Australia.

*Corresponding author. jessica.loza@monash.edu

Abstract

Australia holds 31% of the global uranium resources and currently supplies 12% of the worldwide market. Based on the expected increase in global energy consumption, the demand for uranium is projected to increase, and Australia is well positioned to ensure it remains a significant supplier in the market. However, due to future climate change, the local uranium industry may be impacted as more intense and more frequent extreme weather events are expected, leading to potential disruption to operations and damage to mining infrastructure. Therefore, Australia's reputation as a reliable industry supplier may be at risk in the future. This paper conducts a review of the vulnerability of the Australian uranium industry to climate related impacts, based on surveys conducted around currently operating uranium mines. Operational disruptions, loss of revenue and increased costs have all been reported as existing impacts by major climatic events. Survey respondents identified tailings/waste storage facilities, ore extraction, processing, transport within the mine site and maintenance activities as the most affected. Through this research, critical aspects to improve the adaptive capacity of the industry have been revealed.

Keywords: Australia, uranium, mining, climate change, vulnerability assessment, adaptation.

1. Introduction

1.1. The Australian uranium industry

^{*} This research has been funded by an Australian Postgraduate Award (APA) and the Commonwealth Scientific and Industrial Research Organisation (CSIRO).

Download English Version:

https://daneshyari.com/en/article/8848316

Download Persian Version:

https://daneshyari.com/article/8848316

Daneshyari.com