

# GRAND JUNCTION GEOLOGICAL SOCIETY

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## FEBRUARY MEETING

Joint meeting with the CMU geology students

FEBRUARY 18, 2015

7:30 PM

Saccomanno Lecture Hall  
(In the Wubben Science Building)

Douglas Underhill, PhD, MBA, CPG

Will speak on

“Analysis of the supply and demand for uranium with  
reference to deposit-type geology”

Abstract

Nuclear power currently provides about 11% of world, as well as over 19% of the USA's electric supply. Generation is from about 435 world operable civil nuclear power reactors, with a further 71 under construction. The market prices of uranium, both spot and long-term, have been depressed for nearly 4 years since the 11 March 2011 nuclear accident at the Fukushima Daiichi nuclear power plants caused by the Tohoku earthquake and tsunami and the ongoing reevaluation of nuclear power programs in some countries. The market price suppression was caused by the immediate shutdown of about 10% of the world's reactors; however the longer term outlook for nuclear power remains very positive. Based on a backlog of about 71 plants under construction demand for uranium is projected to grow at the highest rate since the 1970s. This is expected to push the uranium market prices from the current spot of about \$37/lb  $U_3O_8$  to above \$70/lb  $U_3O_8$  and higher, which is required to justify the additional production needed to fill the projected supply gap. Expanding the use of nuclear power, which produces almost no greenhouse gases, is imperative if greenhouse gas targets are to be met, as well as provide base-load generation for expanding electricity needs worldwide. The over 350 known uranium deposits that may be mined to meet nuclear fuel needs include 14 types. However, the bulk of uranium production and the majority of Identified Resources are related to about one-half of these. Following the review of projected supply and demand the geology of the more important deposit types will be discussed. Based on total Identified Resources, plus historic production, the most important uranium deposit-types are: Unconformity, Sandstone, Hematite Breccia Complex, Quartz-Pebble Conglomerate and Intrusive. Other major deposit types are: Phosphate, Metasomatite, Volcanic-related and Surficial.

Guests Are Welcone

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54