

## SUPPLEMENT TO THE THIRD REVIEW

<p>This review addresses an important topic, although one that has received only limited attention in the past decade, in part I suppose because there was a general view that phosphate resources and reserves were more than adequate for the foreseeable future. The authors take issue with this premise, though somewhat obliquely through extensive criticism of some recent global reserve figures and the basis for those figures.</p>	<p>As discussed in our paper, there is uncertainty both in terms of the quantity of PR which is available for human consumption and the future development of PR demand. The essentiality of phosphorus for food production renders it important to have reliable data on PR reserves and Resources, also from an intergenerational perspective. Our concern is that this reliability currently is insufficiently safeguarded and that, while the impression is raised that PR is abundant relative to future demand, there currently is insufficient data to warrant this. We amended the introduction section of our paper to further clarify why it is important to have reliable information on PR reserves as well as on resources and subresource PR occurrences.</p>
<p>However, as rightly pointed out by the reviewers – Scholz and Wellmer – there are some shortcomings that need to be addressed. In their extremely comprehensive set of comments and critiques, all very well documented and referenced, the reviewers address a wide range of points in the paper at which they take issue. These range from the matter of granularity to the shortcomings of the Hubbert curves, the difficulties of translating reserve-resource figures from one country to another (given the arbitrariness of for example the diversity in the spacing of boreholes as a basis for reserves or resources) and so on.</p>	<p>As indicated in our response to the second review, we have addressed the comments by Scholz and Wellmer referenced here by the third reviewer in the final version of our paper.</p>
<p>The response from Edixhoven et al is spirited! I have some sympathy for their comment that the reviewers appear to be wanting to change the scope of the paper. However here I think part of the problem lies with the titling of the paper as ...”an in depth review”. This it is not. The title would have been much better as “Recent revisions of phosphate rock reserves and resources: a critique” or some such more modest title that would not then raise expectations unduly and perhaps render it less liable for some of the criticism of the reviewers?</p>	<p>We agree this is a wise suggestion and have amended the title accordingly</p>
<p>A concern I have, is that whilst the debate here is one of great interest to the phosphate rock aficionados, it may leave some on the margins of the issue and particularly those lacking the background in minerals or energy or resources somewhat confused. Here, one or two diagrams would have been very helpful, starting with something as simple as the McKelvey Box for example – now superseded by much more elegant approaches of course. Diagrams to illustrate JORC and PRSM etc would have been valuable too – all basic stuff for those active in the field, but nonetheless very useful for those trying to understand the problem</p>	<p>We agree this would be very helpful and have added a number of diagrams</p>