

The Science and Engineering of Scale Up.

Joe Pease, Mineralis Consultants

The minerals industry has a poor record of scaling up new technologies. And even for the technologies we do scale-up, the first plants to include them often suffer a slow ramp-up. Critics say we are too conservative. Finance providers think we are incorrigible optimists. Not much common ground there.

I will briefly discuss some of the disappointing scale-ups and ramp-ups of innovative technologies. Are there common factors? What lessons can we learn by comparing with those that succeeded.

Too often we underestimate three defining challenges of minerals processing:

- The perils of particles
- The imperative of robustness
- And, for extractive processes, the Rubik's cube of impurity removal.

The technology concepts and proof come from science. Full-scale success is all about engineering. Can we consider the engineering of scale up to better inform our research?