

VOCONIQ AN ON PROGRAM CASE STUDY

BOX 1 EXECUTIVE SUMMARY

Key findings

The Voconiq project has succeeded in establishing a strong market position in Australia and internationally. It has consolidated its offering with the mining sector and expanded into the agriculture sector. It also plans to provide services to the infrastructure sector, in which understanding community views and values are important to the success of an endeavour.

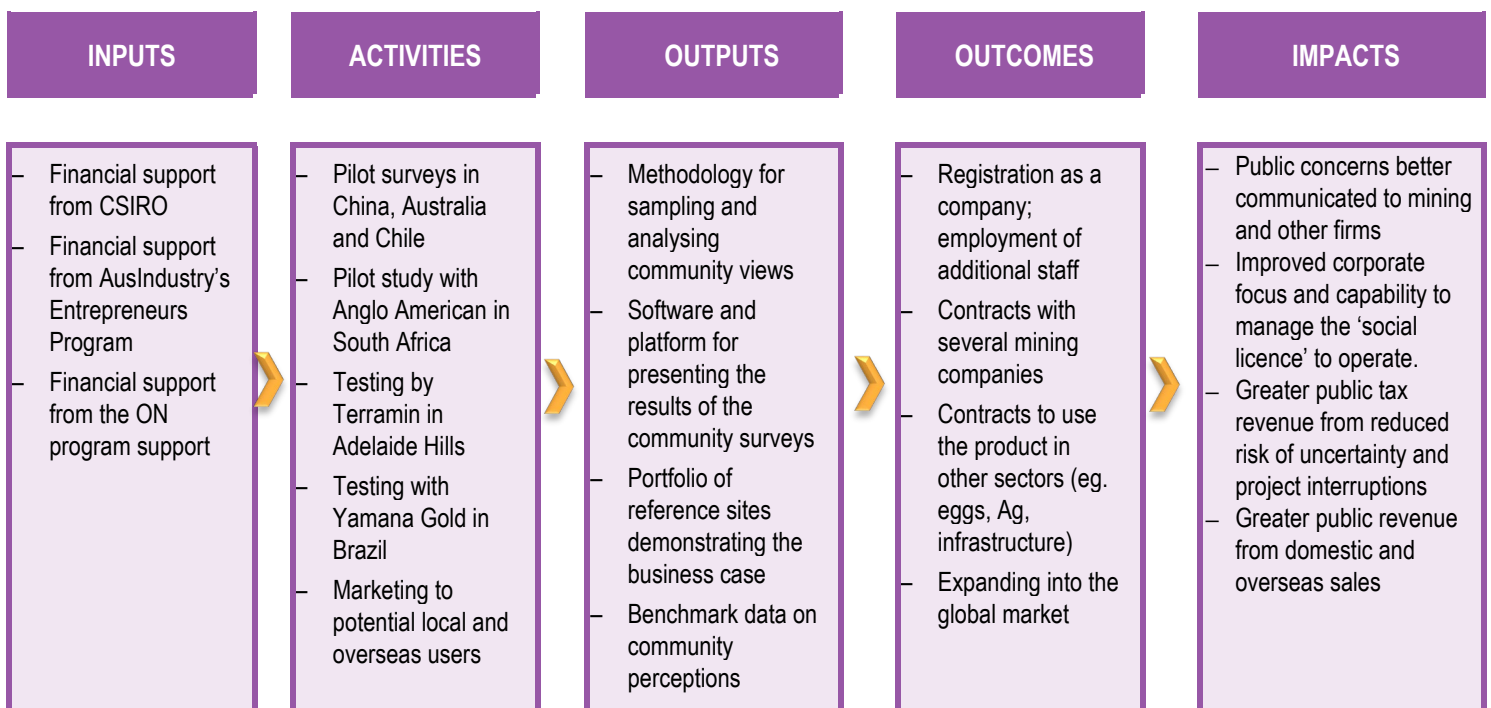
Voconiq (formerly Reflexivity) became an independent company in 2019. The team improved its pipeline of external revenue from \$350k in 2016/17 to \$2.1 million in 2017/18. It is estimated that revenue could be \$5 million by 2022/23. The present value of benefits associated with participation in the ON program is estimated at \$13.5 million in 2018/19 dollars under a 7 per cent real discount rate and the benefit-cost ratio (BCR) is 26.4.

Role played by ON program

ON has supported the development of Voconiq in two ways. First, it helped the project transition from a research project to a commercial service delivery offering. Second, it provided “structure, discipline and process” that helped the Voconiq team identify a way forward whenever there were blockages or uncertainty. The team found the focus on pitching to be particularly valuable for refining the value proposition.

This case study uses the evaluation framework outlined in the CSIRO Impact Evaluation Guide. The results of applying that framework to the Voconiq case study are summarised in Figure 1.

FIGURE .1 VOCONIQ CASE STUDY – IMPACT FRAMEWORK DIAGRAM



1.1 Purpose and audience for case study

This case study describes the economic, environmental and social benefits arising from the Voconiq project, including its registration as a company in 2019.

This evaluation is being undertaken to assess the positive impacts arising from the Voconiq project's participation in 'ON, powered by CSIRO' – the national science and technology accelerator.

This case study can be read as a standalone report or aggregated with other case studies to substantiate the impact and value of the ON program activities as a whole relative to the funds invested in these activities.

The information in this case study is provided for accountability, communication and continual improvement purposes. Audiences for this report may include Members of Parliament, Government Departments, ON, CSIRO and the general public.

1.1.1 CSIRO ON

CSIRO ON was established in 2015 as a four year program by CSIRO to help accelerate the impact of science research into market (the program ends in June 2020). The initiative was expanded through funding from NISA to service more broadly Australia's publicly funded researchers and their industry partners. The aim of the initiative is to more quickly translate great science and technology research into positive impact to help address some of the economic, environmental and social challenges facing the Australian and global community.

There are a number of elements to the program, including two facilitated programs, ON Prime and ON Accelerate. These two elements are designed to complement each other.

ON Prime is an open and collaborative program for existing science projects as well as new technologies and projects that are still in development. ON Prime helps research teams to ensure that they are working on the right problem, it provides frameworks to create and test assumptions about their idea and provide recommendations towards next steps. ON Prime can be considered as an entry level program, in effect it can be seen as a precursor to participation in the ON Accelerate program.

ON Accelerate is designed for teams that have made significant progress with their idea and their target market(s). This may be in the form of contracts for paid or unpaid trials, or at the most advanced stage, recurring sales with both new and existing customers. This implies that teams will have a working prototype of their product or service and have secured any appropriate intellectual property rights. It is expected that teams applying for ON Accelerate would have conducted significant engagement with their potential customers and be able to demonstrate what they learned throughout, including what the total addressable market is and what competition exists.

For ON Accelerate, shortlisted applicants are invited to participate in a two-day Selection Bootcamp event where teams are provided with training and coaching simulating the accelerator experience. At the conclusion of the selection boot-camp, the teams pitch to a panel of external judges for a spot in the Accelerator. Projects that are at Investment Readiness Level (IRL) Stage 3 can apply directly for ON Accelerate without going through Prime or Bootcamp.

Following a team's passage through the ON Prime or ON Accelerate program they are eligible to apply for ON Runway support. That funding is designed to help teams to further progress their project. The support provided can be spent on a range of services, for example, regulatory certification, marketing, bookkeeping or investor agreements.

The program is expected to exceed its targets for participation. It is predicted that it will have reached 515 teams with over 1,850 people by the time it concludes on 30 June 2020.

1.2 Background

Businesses can experience significant financial and reputational costs if they fail to understand the issues of concern to the communities within which they operate, and neglect to maintain the trust that underpins their social licence to operate. Focused initially on mining activity, Voconiq is a tool to assist companies to engage with local and larger scale communities and to gain a better understanding of community attitudes to industrial activity.

The Voconiq technology is an end to end software and community engagement solution that uses contextually appropriate data collection methods, to measure community sentiment and then stream insights about community concerns to a customer's web platform.¹ The program typically involves a series of community and stakeholder consultations (workshops) that inform the design of a detailed 'anchor' survey (baseline) and thereafter monthly, quarterly, or six-monthly 'pulse' surveys (online, by mobile or phone)

¹ Reflexivity Pty Ltd was registered as a company in January 2019, the staff left CSIRO at the end of April 2019 when all agreements between CSIRO and Reflexivity came into effect. The company changed its name to Voconiq in August 2019.

to track the trust indicators as determined by advanced analysis. This social performance data is reported via streamed interactive dashboards and reports. Using this information, companies can benchmark and track their performance at individual operations and/or across an enterprise as a whole, and over time. It gives communities a voice that can potentially be heard by various management levels within those companies.

Following successful trials in Australia and internationally in mining, the tool developed by Voconiq is now being used in other sectors (eg. eggs, live exports) and there are plans to implement projects in more sectors (eg. infrastructure). Reflexivity Pty Ltd was registered as a company in January 2019 and rebranded to Voconiq in August 2019.

1.3 Impact Pathway

1.3.1 Project Inputs

The total amount of support for the Voconiq project was \$2,160,063 in cash and in-kind contributions. This was largely from CSIRO in the form of salaries which were provided until April 2019 (see **TABLE .1**).

TABLE .1 SUPPORT FOR THE PROJECT

Contributor / type of support	2016 (\$)	2017 (\$)	2018 (\$)	2019 (\$)	Total (\$)
Cash					
Minerals Resources Business Unit (CSIRO)	\$610,000	\$450,000	\$450,000	\$112,500	\$1,622,500
AusIndustry Entrepreneurs Program	\$50,000				\$50,000
ON Accelerate	\$188,636				\$188,636
On Runway	\$107,601	\$135,000	\$52,042	\$4,284	\$298,927
In-kind					
Total	\$956,237	\$585,000	\$502,042	\$116,784	\$2,160,063

1.3.2 Project activities

The methodology developed by the Voconiq researchers begins with a stakeholder and community planning and engagement phase. This process allows them to build a panel of community participants that contribute to the stakeholder engagement process over time. The panel of participants are given an initial comprehensive 'anchor' survey. The results of the anchor survey are used to create a baseline of community views and attitudes and identify key indicators of the level of trust in the company and acceptance of its operation(s) by the community. These indicators are tailored to reflect the local situation.

The next stage of the methodology involves shorter, periodic (usually monthly or six-monthly) email or SMS surveys (referred to as 'pulse surveys'), which are used to track changes in community views or concerns over time. The results of the surveys are aggregated, analysed and the insights communicated through an interactive dashboard (and other more traditional reporting methods) to the company concerned. The results show the company how the key indicators of trust and acceptance are changing over time. The company can then, when it is judged to be appropriate, seek to address any emerging issues of community concern.

The methodology for community engagement and the collection of baseline data on community attitudes was developed prior to (and in conjunction with) participation in the ON program through the following activities:

- surveys about public attitudes to mining in Chile (2013), China (2014) and Australia (2014, 2017)
- a program of research with Santos GLNG (2011-2015) to assess community attitudes toward the company and gas extraction in the Surat Basin, Queensland
- a pilot study with Anglo American (2014-2015) at four mine sites in South Africa and one in Australia that surveyed community attitudes to disturbances caused by dust and noise, employment opportunities, and enterprise development activities, and relaying these through an interactive dashboard.
- testing of the Voconiq model by Canadian firm Yamana Gold in Brazil (2017).

Voconiq's survey model has also been tested with Terramin which has a proposed mine site in the Adelaide Hills (2016). A grant of \$50,000 from AusIndustry's Entrepreneurs Program matched by company funding was used to support this activity.

The innovation/commercialisation opportunity in this project lies in its scalability and subscription model. Whereas competitors offer one-off instances of community sentiment analysis, Voconiq offers an ongoing subscription model that provides both real time and time series data directly to the company.

1.3.3 Project outputs

Since participating in the ON program in March 2016, Voconiq has secured significant new contracts and expanded beyond the mining sector, this includes:

- a contract for with Rio Tinto in the Pilbara across four communities for a three-year period.
- a contract with Rio Tinto global to aggregate data from multiple Rio Tinto product groups to the enterprise level over a three-year period.
- being invited to join the SEQ Water's Social Research Advisory Board for its expertise in social licence and community engagement
- a contract with Australian Eggs to conduct a three-year national community attitude project; at the time of writing, the report for year two has just been completed.
- a contract with BHP to roll out *Local Voices* (first trialled in the Pilbara) at five communities around Australia over three years
- a contract with Kalgoorlie Consolidated Gold Mines (KCGM) and Boddington Gold Mine to deliver *Local Voices* at these sites in Western Australia.
- a contract with YamanaGold to roll out the service in Brazil, Argentine and Chile over a three-year period starting in 2018.
- agreement with AgriFutures Australia, together with ten Rural Research and Development Corporations (RDCs), the National Farmers Federation and the NSW Department of Primary Industries to build the capacity of the food and fibre industries to engage with the community. Over three years the program will provide an analysis of the underlying values driving community attitudes and trust towards food and fibre production.
- a contract with LiveCorp to undertake a national study of public sentiment about live cattle exports, over a three-year period.
- a contract with the commercial kangaroo industry to undertake a national study of public sentiment over a one-year period.
- a contract with Salazar Resources (Toronto) for an emerging gold mine in Ecuador. At the time of writing, data collection was about to commence.

Role of ON program

ON provided "structure, discipline and process" to the project, and sharpened the commercial focus on how and what it could deliver as a business. It helped identify pathways forward and provided expertise and resources when developments slowed due to barriers, blockages or uncertainty. The focus on pitching was considered very valuable in that it focused attention on how to deliver messages with impact, and refining and articulating the Voconiq value proposition. This was identified as one of the key benefits by the Voconiq team.

The technology platform used by Voconiq was partly funded by ON and partly by CSIRO Mineral Resources. Its design was strongly informed by the expertise in technology development that Voconiq was able to access through its participation in the ON program. The Voconiq team restructured how it conducts and delivers its service, making new hires and organising functions differently within its team such that twice the work volume gets delivered by 1.2 times increase in FTE staff.

1.3.4 Project Outcomes

In April 2019 Reflexivity changed its name to Voconiq and became an independent business with a website and an expanded base of 9 employees, including four contractors. Financial support from CSIRO and ON concluded in April 2019.

Voconiq has moved from small test activities to significant contracts with multinational companies. It has expanded its business offering to other industries including oil and gas, and the agriculture sector (food and fibre, eggs) and developed a 'place based' model that enables it to support construction projects, such as road developments.

Role of the ON program

ON helped Voconiq to transition from a typical research-based business model (with associated fixed time and cost based pricing) to a subscription (value pricing) model that is scalable. The team has improved its pipeline of external revenue from \$350k in 2016/17 to \$2.1 million in 2017/18 and they estimate that revenue could be \$5 million by 2022/23 as a result of the change in business model, the greater clarity around their value proposition and the capacity development of the core team.

1.3.5 Adoption

Use of the technology developed by Voconiq has grown significantly. It has been adopted by some of the largest mining companies in Australia and internationally. It has also successfully extended into market opportunities beyond mineral extraction, including in the agriculture sector, and large infrastructure or industrial projects.

The technology operates in a crowded marketplace. Management consultancies, market research and opinion research companies and universities also offer community research and engagement tools. However, the firm's differentiated offering includes an end to end product, validated models that have been published in peer reviewed literature, unique localised analysis and real time social performance metrics, and a strong reputation/brand due to its foundations in the research done by CSIRO.

Role of the ON program

Participation in ON encouraged a focus on competitors and their growth trajectories, and the market for the services provided by Voconiq both domestically and internationally. That analysis helped the team to identify the value proposition and growth targets that Voconiq required to be viable.

1.3.6 Impacts

The evidence of the impact of greater community voices and community engagement in the sorts of endeavours the Voconiq is targeting is very site specific and more likely to become apparent in the longer term. Impacts recorded from the use of the tools developed by Voconiq to date include:

- Santos GLNG, Australia: data was used to report to government against social impact management plans and shape the strategic community investment and engagement strategy. Community sentiment was shown through the Voconiq method to be more positive toward Santos GLNG (than the industry as a whole) as a result of their investment/engagement approach through the construction phase of development.
- Anglo American, South Africa: using monthly Voconiq data to track sentiment among local communities, a troubled platinum mine in South Africa, improved trust within the community to levels very similar to three other high functioning mines in South Africa. The data provided to the mine shaped who and how to engage local communities to address relevant issues, avoiding conflicts that had beset similar mining operations in the same platinum mining region. Community members and company personnel reported the process was completely novel, powerful, and inspired a new way of relating to each other.
- YamanaGold, Brazil: community members in the Jacobina region indicated that the Voconiq process was highly novel and demonstrated to them the company was interested in engaging them differently. The data collected in this work accurately predicted an emergent issue in the community that would lead to conflict with the mine in the first 12 months of deployment. The technology was subsequently deployed at four additional sites.
- Terramin, Australia: in 2016, Terramin engaged CSIRO to conduct an analysis of community attitudes to the proposed underground gold operation in Adelaide. 'Local Voices' (the Voconiq methodology) helped the company gain a clearer view of the community's concerns about the mine, and the challenges to developing a constructive relationship with community members. This information has been vital to providing government with sentiment reflective of the broader community.

1.4 Clarifying the Impacts

1.4.1 Counterfactual

Without the intensive activity and training provided by ON, the team would not have progressed to commercialisation at the current pace. As one team member remarked:

The time and energy required to progress to the current point has been considerable – it is clear to me now that if this was how long it took with the ON assistance, it would have taken easily four times as long without, if at all.

Participation in the ON program clearly facilitated the commercialisation of the Voconiq service offering. The team believes that without ON they would not have recognised the scalability of their projects and would have continued to run a research based business model (with associated fixed time and cost based pricing) at minimal margins. In other words, ongoing costs would have continued to track just below the revenue curve. The team estimates that their annual revenue might have plateaued at a figure between \$1.5 million and \$2 million. For the cost benefit analysis, ACIL Allen has assumed that the project would have delivered annual revenues at the high end of this estimate.

The team also believes that the timing of their participation in ON was critical to its subsequent success. ON focused the team on the project and helped them to accelerate its preparation for commercialisation, whereas otherwise they may have moved on to other work and missed the market opportunity.

1.4.2 Attribution

ACIL Allen attributes the difference in the net present value of the estimated revenues delivered from the Voconiq services, and estimated revenues in the absence of the ON program, entirely to the ON program.

1.5 Evaluating the Impacts

1.5.1 Cost-Benefit Analysis

Costs

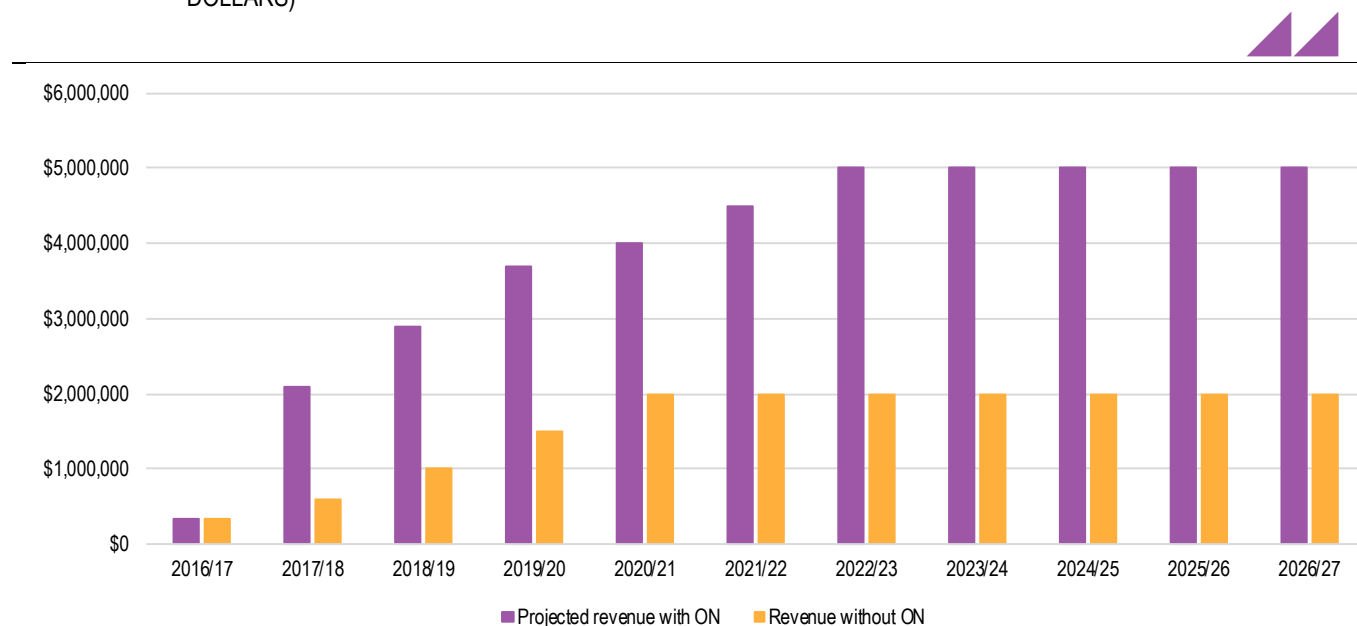
As can be seen in **Table 1** the ON-related costs of the Voconiq project were just under \$487,563. It is assumed that the R&D costs of Voconiq would have been the same even if the company did not participate in the ON program.

Benefits

The projected revenues of Voconiq between 2016/17 and 2026/27 with and without participation in the ON program are shown in **Figure 2**. The revenues are conservatively assumed to plateau in 2022/23 in the “with ON participation” case at \$5 million. In the counterfactual (“without ON participation”) revenues are projected to plateau at \$2 million in 2020/21.

The incremental revenues (that is, the difference in projected revenues between the two cases) represent a conservative valuation of the benefits generated by Voconiq, as they do not take into account the “consumer surplus” enjoyed by customers. (That is, some customers would have been willing to pay more than the price charged by Voconiq, based on the quantum of benefits they expect to gain from purchasing the product/service.)

FIGURE 2 VOCONIQ REVENUES WITH AND WITHOUT PARTICIPATION IN THE ON PROGRAM, 2016/17 TO 2026/27 (2018/19 DOLLARS)



SOURCE: VOCONIQ

ACIL Allen has conservatively assumed that the benefits stream, from the Australia-wide perspective, will cease after 2026/27 due to the introduction of a similar product in the marketplace by another company.

In addition, it is assumed that a proportion of production costs (specifically, cost of goods sold or COGS) is spent on foreign-sourced inputs. This proportion was estimated at 27 per cent in 2019/20 and is projected to be 33 per cent in 2020/21, 40 per cent in 2021/22, 45 per cent in 2022/23. The payment for foreign-sourced inputs represents a “leakage” out of the Australian economy.

The projected operational costs and COGS of Voconiq between 2018/19 and 2026/27 with participation in the ON program are shown in **Figure 3**. Note that the CBA assumes that the OPEX costs (operating expenses) are approximately the same with or without participation in the ON program, and COGS scales with revenue (i.e. COGS is lower without participation in ON due to lower revenues and activities).

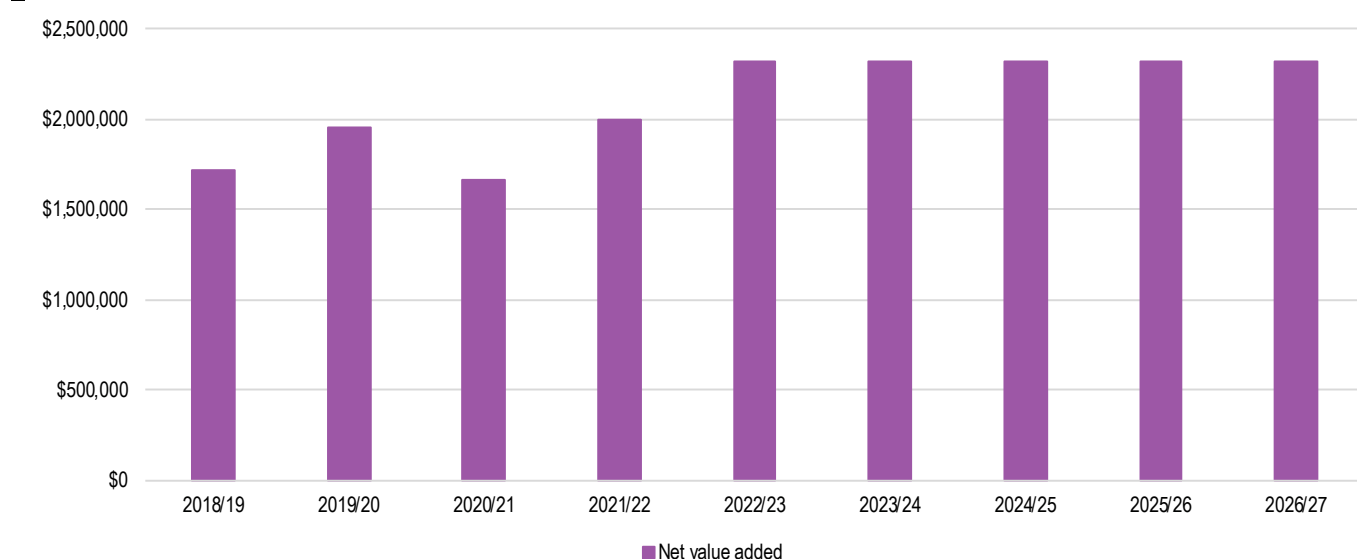
FIGURE 3 PROJECTED VOCONIQ OPERATIONAL COSTS AND COGS WITH PARTICIPATION IN THE ON PROGRAM, 2018/19 TO 2026/27 (2018/19 DOLLARS)



SOURCE: VOCONIQ

Taking into account this “leakage”, the net value added to the Australian economy by Voconiq (relative to the counterfactual where the ON program did not exist) is shown in **Figure 4**.

FIGURE 4 NET VALUE ADDED TO AUSTRALIA BY VOCONIQ, 2018/19 TO 2026/27. (2018/19 DOLLARS)



Note: the CBA calculation only includes benefits, operational costs and cogs from 2018/19 following their participation in the ON program.

SOURCE: VOCONIQ

Assessment of benefits against costs

The present value of ON-related costs incurred by Voconiq is \$509,690 in 2018/19 dollars. The present value of benefits associated with participation in the ON program is estimated at \$13.5 million in 2018/19 dollars under a 7 per cent real discount rate.

The net present value (NPV) of participation in the ON program is thus \$12.9 million under the 7 per cent real discount rate, while the benefit-cost ratio (BCR) is 26.4. The NPV is calculated by subtracting the present value of costs from the present value of benefits, while the BCR is calculated by dividing the present value of benefits by the present value of costs.

Sensitivity analysis

If the projected revenues of Voconiq (with participation in the ON program) between 2017/18 and 2026/27 are 20 per cent higher than those in the central case of the cost-benefit analysis, the BCR will increase from 26.4 to 36.8. Conversely, if the projected revenues between 2017/18 and 2026/27 are 20 per cent lower than those in the central case, the BCR will decrease to 16.4.

If the projected operational costs and cost of goods sold of Voconiq (with participation in the ON program) between 2017/18 and 2026/27 are 20 per cent higher than those in the central case of the cost-benefit analysis, the BCR will decrease from 26.4 to 25.2. Conversely, if the projected operational costs and cost of goods sold between 2017/18 and 2026/27 are 20 per cent lower than those in the central case, the BCR will increase to 27.6.

In the central case of the cost-benefit analysis, a 7 per cent real discount rate has been used. The BCR increases to 30.4 under a 4 per cent real discount rate and decreases to 23.2 under a 10 per cent real discount rate.

1.5.2 Potential future impacts

Voconiq is on a pathway to growth, with significant new markets currently being explored. Anticipated impacts include a process and expectation of community engagement adopted as industry standard, delivering significant benefits beyond the mining sector, and providing new research opportunities through access to low cost data collection services. The growth in Voconiq's sales in Australia and overseas will create a revenue stream for CSIRO as they receive royalty from sales.

Anticipated impacts on Australians include local communities having a new voice in decision making processes and input to contested developments across multiple sectors. Anticipated economic benefits for Australia relate to more fully realising the economic value of its resources through reduced interruptions to mining activities and (increasingly) the activities of other sectors, including infrastructure projects, because any community concerns are recognised earlier and more effectively managed. This will provide improved employment security, more certainty around company revenue flows and ultimately greater tax revenue for the Australian government.