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Calix Newsletter - Issue 48 - September 2024

Sydney, Australia | 12 September 2024 - Australian environmental technology company, Calix Limited (ASX: CXL) ("Calix" or "the Company") is pleased to provide a copy of its latest newsletter, providing a comprehensive update on activities across the business, including updates on its major projects and the publication of its FY24 results. The newsletter is attached overleaf.

-ENDS-

This announcement has been authorised for release to the ASX by:

Phil Hodgson Managing Director and CEO

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About Calix

Calix Limited (ASX: CXL) is an environmental technology company solving urgent global challenges in industrial decarbonisation and sustainability.

Calix's unique patented core platform technology delivers efficient indirect heating of raw materials to enable renewably powered mineral processing and efficient capture of unavoidable industrial emissions.

With strong and increasing demand driven by global commitments to net-zero emissions, Calix is applying its core technology to the decarbonisation of cement, steel and alumina, sustainable processing of critical minerals, direct air capture of atmospheric carbon dioxide, and sustainable environmental products.

Each application of the technology is being deployed through a proven licensing, joint-venture and spin-out model. Subsidiary businesses focused on a specific application and target market accelerate commercialisation and enable a flexible equity funding model to support exponential growth.

Leveraging its core platform technology and a global network of partners, Calix is urgently developing multiple environmental businesses that deliver positive global impact. Because there's only one Earth.

Mars is for quitters.

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Welcome to Issue 48 of the Calix Newsletter



Phil Hodgson **CEO & Managing Director**

Welcome to Issue 48 of the Calix newsletter. In this edition, we are pleased to feature highlights from our recently published FY24 results, as well as provide updates on several of our projects from recent months.

Calix delivered significant milestones on the path to commercial returns across all its lines of business in FY24. In Leilac, engineering revenues jumped to \$3.2m, driven by advancing opportunities into paid studies and work. In Magnesia, sales and services revenue increased 14% from FY23 to \$21.0m, driven largely by growth in the U.S. at increased gross margin. And in the Sustainable Processing business, continued on-time and on-budget development of our Joint Venture (JV) project with Pilbara Minerals (ASX: PLS) is setting this business up for its first major revenues.

This focused delivery was reflected in our group financial results. In FY24, Calix achieved a gross profit of \$10.3m, up from \$6.2m in FY23, driven by a 30% increase in products and services revenue to \$24.2m. Additionally, Calix realised a gain of \$12.2m in FY24 from its JV with Pilbara Minerals. This gain is a result of Calix's free-carried equity in the JV's demonstration plant and recognises the value of our intellectual property contribution.

It is pleasing to see growth and diversification in our revenue streams. Importantly, these new and growing revenue streams provide great cash support as we develop the technology prior to the commencement of licensing royalties.

Throughout FY24, Calix continued its planned investment in the delivery of its priority projects. These investments were supplemented by \$5.2m in grants and tax rebates from governments in the various countries in which we operate. Calix finished the financial year with \$43m cash on hand, down just 10% from 31 December 2023, despite continued investment in capability and key project delivery.

Calix's balance sheet, growing revenue streams and cost management discipline provide the cash support needed for current operations and technology development. Our approach to couple paid engineering studies with secured grant funding is designed to support first-of-a-kind commercial demonstration of the technology in key markets prior to first receipts of royalty revenues. Calix's capital management and funding strategy continues to focus on opportunities to secure capital in the form of equity, debt or grants at the subsidiary and project level to fund projects and accelerate industry application.

Calix also continues to make progress towards greater sustainability in our own operations. With a commitment to science-based emission reduction in line with the 1.5°C pathway, gender balance at all levels of the organisation, and addressing the sustainability of the materials and resources we use in our business, we are moving to better integrate Calix's internal sustainability initiatives with the Company's strategic priorities. We invite you to read more about Calix's performance and progress in FY24 in our 2024 Annual Report, Sustainability Report, and Corporate Governance Statement.

FY25 got off to a great start with the award of a \$15m grant from the Australian Government's Carbon Capture Technologies Program. This funding will support the construction of a world-first plant in South Australia that aims to demonstrate an innovative combination of electrification and carbon capture for near zero emissions lime and cement and enable the capture and use of CO₂ produced unavoidably by industry to make low-carbon transport fuels for shipping.

Our newsletter also features other operational milestones from recent months, including the announcement of two Direct Air Capture (DAC) projects with Heirloom in Louisiana, USA; a signed JV agreement between Leilac and Heidelberg Materials (FWB: HEI) for Leilac-2; and the start of construction of Calix's 'mid-stream' lithium demonstration plant in JV with Pilbara Minerals. We also highlight collaborations with Boral and SmartCrete Cooperative Research Centre to develop alternative low-carbon intensity cement materials, and ARC Training Centre for Environmental and Agricultural Solutions to Antimicrobial Resistance (CEA StAR) to help the fight against anti-microbial resistance.

New videos showcasing our team and technology provide an opportunity to take a look behind the scenes at Calix. Follow the links in our newsletter to learn more about our platform technology, watch YouTube channel Engineering with Rosie explore our solutions for cement decarbonisation, and meet some of our team through video profiles and panel discussions.

Our priorities for FY25 continue a theme of focused delivery. We will prioritise completing construction and commissioning of our demonstration plant with Pilbara Minerals, breaking ground on the Leilac-2 plant in Ennigerloh, Germany with Heidelberg Materials, and breaking ground on the first commercial scale DAC facility with Heirloom in the U.S. The successful commissioning of these plants will pave the way to our first licensing revenues from the lithium, cement and DAC applications.

We also aim to progress the Zero Emissions Steel TechnologY (ZESTY) demonstration plant towards a Final Investment Decision and beyond. And as we work to deliver Calix's key priority projects and turn licence agreements into royalty payments, we will continue to prioritise revenue growth and diversification from Calix's Magnesia business as well as paid engineering studies.

On behalf of the Board, I would like to thank Calix's employees for their tireless efforts and unwavering commitment to achieving our purpose and goals. It is a privilege to be part of such a talented, capable, diverse and driven team. We are also grateful to our customers and partners for their continued commitment and collaboration as we work together to solve global challenges. And, importantly, we thank all of our shareholders for their continued support of our vision to deliver commercial success that creates both significant shareholder and societal value as we help solve some of the most pressing global challenges of our time.

Calix reports revenue growth & diversification

Calix released its results for the 2024 financial year on 27 August, reporting revenue growth and diversification alongside numerous milestones for its key projects.

FY24 PRODUCT & SERVICES REVENUE

\$24.2m

(FY23: \$18.6m)

FY24 REVENUE, INTEREST & OTHER INCOME

\$30.5m

(FY23: \$29.6m)

LEILAC SERVICES REVENUE

\$3.2m

FY24 GRANT FUNDING & TAX INCENTIVES

\$5.2m

FY24 GROSS MARGIN

43%

(FY23: 33%)

PLS UJV GAIN \$12.2m

INVESTMENT IN PROPERTY. PLANT & EQUIPMENT

FY24 GROSS PROFIT

\$10.3m

(FY23: \$6.2m)

\$15.1m

CASH ON HAND

(31 Dec 2023: \$47.8m) (30 June 2023: \$74.5m)

Revenue growth & diversification

- Growing revenue through Leilac customer engineering studies
- Continued revenue & margin growth in the Magnesia business
- Gain resulting from co-investment with Pilbara Minerals UJV

Diligent investment

- Investment in capability & capacity building for commercialisation
- Key projects were supported by grant funding & paid engineering
- Investment partially offset by \$5.2m (FY23: 10.7m) in grants & tax rebates

Capital strategy

- Balance sheet remains strong & essentially debt free
- Balance sheet, growing revenue streams & cost management discipline to support current operations & technology development
- Capital management & funding strategy continues to focus on opportunities to secure capital in the form of equity, debt or grants at the subsidiary & project level to fund projects & accelerate industry application

Watch our FY24 Results presentation



"Calix's FY24 results demonstrate a strong and robust financial position, driven by record revenues, diversified revenue streams, increasing gross margins, and diligent investment in the commercialisation opportunities that our platform technology presents.

This position enables us to continue to focus on our core capital strategy to identify opportunities to accelerate the application of our technologies across specific industry segments."

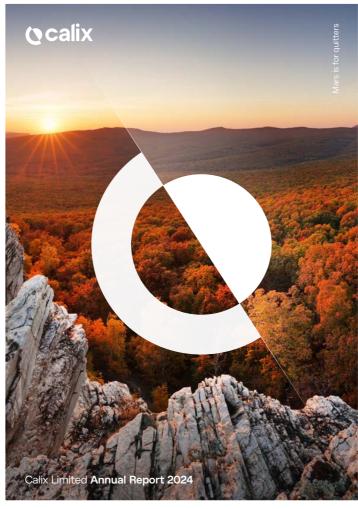
Darren Charles, Chief Financial Officer

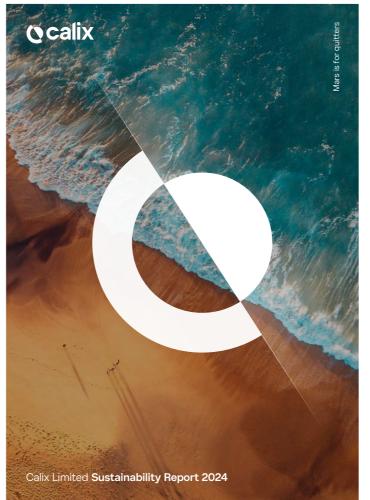


Calix publishes its annual reports

Alongside its financial results, Calix provided further details of its performance for the 2024 Financial Year in its Annual Report, Sustainability Report, and Corporate Governance Statement.

Read the reports to learn more about Calix's operational highlights for the year, including its progress towards operating sustainably, with a focus on science-based emission reductions, gender balance, and responsible resource use.







Calix awarded \$15m grant for zero emissions lime & cement CCU plant

A world-first supported by the Australian Government

Calix is pleased to have been awarded a \$15 million grant from the Australian Government's Carbon Capture Technologies Program. The grant will support the construction of a world-first, renewably powered carbon capture and use (CCU) demonstration plant in South Australia to produce near-zero emissions lime and supply captured industrial CO2 emissions to the HyGATE funded Solar Methanol Project.

Demonstrating zero emissions lime & cement

Lime is an essential material used in the iron and steel, alumina, paper, pharmaceuticals, food, farming, and chemical industries. Demand for lime in Australia is predicted to grow by 57% between 2022 and 2050. Like cement, lime is produced by heating limestone to form quicklime (calcium oxide). When heated, carbon dioxide is unavoidably released directly from the raw material, with this process accounting for the majority of the cement and lime industries' emissions.

Electrification plus carbon capture by the Leilac technology enables the avoidance of fuel emissions and the capture of unavoidable process emissions. The innovative CCU project aims to capture and use this unavoidable CO2 to make a low-carbon transport fuel for the shipping sector, significantly reducing the carbon footprint of multiple industries and demonstrating a cost-effective CCU decarbonisation pathway for cement and lime.

In a second phase of the project, the Zero Emissions Intensity Lime and Cement Technology Built in Australia Project (ZETA) will aim to expand production to include the processing of cement raw meal to a near-zero emissions cement clinker product, with captured process CO2 again supplied for use. By incorporating cement clinkering as an additional process in the Leilac technology, the project aims to develop a novel route to zero emissions clinker production that reduces cost, energy consumption and footprint.



Calix CEO and Managing Director, Phil Hodgson said Calix was delighted to have been awarded funding under the Australian Government's Carbon Capture Technologies Program.

"This highly innovative project aims to demonstrate solutions for several national priorities identified in the Australian Government's Future Made in Australia program.

"Calix's renewably powered technology platform can electrify mineral processing and capture unavoidable emissions to enable carbon-intensive industries like cement and lime to reach net zero.

"Zero emissions lime will also be an important enabling material for the development of an Australian green metals industry for green steel and aluminium. Additionally, by combining captured CO₂ with Australian sunshine in collaboration with our partners in the SM1 project, we aim to demonstrate a low-cost decarbonisation pathway for cement and lime and a novel way to make low-carbon transport fuels."

Phil Hodgson, Calix CEO & Managing Director

Using captured emissions to make sustainable fuels

The novel, renewably powered CCU project aims to generate two revenue streams through the production of near-zero emissions lime and the sale of captured CO₂ for use as a chemical feedstock.

The Leilac technology will be used in Project ZETA to capture up to 20,000 tonnes of process CO₂ emissions annually. Up to 15,000 tonnes of CO₂ will be sold to the Solar Methanol Project each year to produce green methanol, with additional captured CO2 potentially supplied to other users in local industry. The Solar Methanol Project is being developed by a consortium including Vast (NAS: VSTE) and German energy company Mabanaft, under the Australian-German funded HyGATE initiative.

Supporting a Future Made in Australia

Collectively, Project ZETA aims to develop and demonstrate cost-effective solutions to manufacture sustainable lime, cement and future fuels, while also supporting the decarbonisation of other hard-to-abate sectors like steel and aluminium.

Hodgson concluded, "It is exciting to see Australian technology companies, supported by Australian Government funding, collaborating to take advantage of the unique comparative advantages Australia can have in a decarbonising global economy."



Vast CEO, Craig Wood said, "We are delighted to be partnering with Calix on SM1, using CO2 captured from their near zero emissions lime plant to produce green methanol to decarbonise the maritime sector. It is excellent to see the Australian Government supporting companies like Vast and Calix as we develop solutions to decarbonise shipping and aviation globally."

Mabanaft's Director New Eneray. Philipp Kroepels said, "We believe that government support, such as that provided by Australia and Germany through the HyGATE initiative, is essential to stimulate development of low-carbon, sustainable fuels, including methanol. Our joint project with Calix and VAST will certainly take us forward in developing viable solutions for decarbonisation."



Hodgson concluded, "It is exciting to see Australian technology companies, supported by Australian Government funding, collaborating to take advantage of the unique comparative advantages Australia can have in a decarbonising global economy."



U.S. DAC projects with Heirloom announced

Heirloom, a leading U.S. Direct Air Capture (DAC) company, has unveiled plans to construct two DAC facilities in Shreveport, Louisiana, capable of jointly removing up to 320,000 tons of carbon dioxide from the atmosphere each year. Both facilities will deploy Leilac's innovative electric calcination and carbon capture technology under a global licence agreement.

The first facility, with a capacity to remove ~17,000 tons of CO2 annually, is slated to commence operations by 2026. A second facility, designed to handle ~300,000 tons per year, will be developed in phases, starting with an initial capacity of ~100,000 tons expected to be operational by 2027.



"Direct Air Capture is a huge potential market in the global effort to address climate change. Heirloom and Leilac's partnership and complementary technologies deliver an innovative pathway to drive down DAC costs and be at the forefront of this exciting opportunity. It is pleasing to see the significant progress being made."

Phil Hodgson Calix CEO & Managing Director



"We couldn't be more excited to be building these new facilities in Northwest Louisiana. These investments not only bring meaningful economic activity and job creation to the region, but also help to cement Louisiana as a leader in this new energy economy and further America's leadership on the global stage.

"Coming shortly after we opened America's first commercial DAC facility, this expansion in Louisiana continues Heirloom's strong momentum as we work toward billion-ton scale."

Shashank Samala Heirloom CEO



Leilac & Heidelberg Materials agree Joint Venture for Leilac-2

Leilac and Heidelberg Materials have formed a Joint Venture (JV) for the construction, operation and future ownership of the Leilac-2 demonstration plant at Heidelberg Materials' Ennigerloh cement plant in Germany.

The Leilac-2 project aims to demonstrate a replicable module that can efficiently capture up to 100,000 tonnes per year of unavoidable process carbon dioxide emissions released during cement and lime production.

Calix has had a long-standing relationship with Heidelberg Materials. Construction of the Leilac-2 project follows the pilot-scale Leilac-1 project at Heidelberg Materials' cement plant in Lixhe, Belgium which was opened in 2019.

The JV between Heidelberg Materials and Leilac, Calix's 93% owned subsidiary, comprises a suite of agreements relating to the Leilac-2 demonstration plant. These agreements include the formation of a civil code partnership and the terms for the lease, cost sharing, operation, and a potential future transfer of ownership of the plant.

Following construction and commissioning, Leilac-2 will be operated for up to three years to test and demonstrate the performance and operability of the technology. Subject to the Leilac-2 plant meeting technical and commercial performance criteria relative to other available carbon capture technologies during this period, Heidelberg Materials will consider taking ownership of the plant and in such case repay Leilac's capital contribution to the project, less depreciation.

Leilac-2 costs & timing

Detailed engineering for site-specific integration continues following the change in project location to Ennigerloh earlier this year. Final capital costs for the project remain subject to the completion of this work. It is currently expected that there will be no material change in the scope or objectives of the project. The Leilac-2 project was awarded funding of €16m from the European Union's Horizons 2020 programme and is supported by various cash and in-kind commitments from the project's consortium partners.

Leilac is considering various options to fund its remaining share of the construction cost, including its own balance sheet, capital and debt options. The majority of the project's capital expenditure will occur following the completion of permitting and the beginning of construction. The project timeline remains subject to permitting, with construction expected to occur in 2025 and commissioning in 2026.

Leilac-3: full-scale deployment

In parallel with the construction of Leilac-2, Heidelberg Materials and Leilac have committed to explore initial steps required for the development of a full-scale commercial installation of the Leilac technology at a Heidelberg Materials cement plant.

Success of Leilac-2 provided, Leilac-3 would be the third and final scale up step for the Leilac technology, representing an up to five-fold increase in capture capacity from the demonstration plant. A Leilac-3 plant could potentially process all the host cement plant's raw material, typically capturing between 0.5-1 million tonnes of unavoidable process CO₂ emissions per year, depending on the size of the host plant.

Heidelberg Materials and Leilac have previously signed a global licence agreement. The agreement covers the potential use of the Leilac technology at up to 150 Heidelberg Materials' cement plants across five continents in case the performance and operability of the technology have been demonstrated successfully.



"The formation of a joint venture with Heidelberg Materials for the Leilac-2 plant marks another important milestone for commercialisation of the Leilac technology. We look forward to continuing to collaborate with Heidelberg Materials to demonstrate and deploy cost-effective solutions to decarbonise cement production at commercial scale."

Daniel Rennie Leilac CEO

"The rapid testing and implementation of state-of-the-art carbon capture technology is key to decarbonising the cement industry in Germany. I look forward to the construction start and seeing the Leilac-2 demonstration plant taking shape soon."

Christian Knell Heidelberg Materials General Manager Germany



Construction of Calix & Pilbara Minerals' Mid-Stream Demonstration Plant gets underway

The Mid-Stream Demonstration Plant Project, that aims to produce a low-carbon energy intensity lithium salt in a joint venture with Pilbara Minerals, moved into construction phase in the June Quarter 2024.

Bulk earthworks at Pilbara Minerals' Pilgangoora Operation are complete. The site is ready for concrete and detailed earthworks, with preferred contractors selected.

Off-site fabrication of key equipment is well progressed, including the Calix electric calciner, structural steel modules and tanks, with many equipment packages being dispatched to the site.

The project remains on time and budget, with commissioning due to commence in the March Quarter 2025 and the first lithium salt production targeted for the June Quarter 2025.





Calix & Boral partner to develop low-carbon intensity calcined clay

In collaboration with Boral, the University of Technology of Sydney (UTS), Transport for NSW, and the SmartCrete Cooperative Research Centre (CRC), Leilac and Calix have successfully produced the first batch of locally sourced Australian clay using its renewably powered electric calcination technology.

This achievement marks an important milestone for Leilac and Calix, highlighting their commitment to advancing multiple decarbonisation pathways for the cement industry.

Calix's technology allows for energy efficient, precise, and flexible mineral processing. It also enables the efficient capture of any unavoidable process emissions as high-purity CO₂ without additional chemicals or processes, and the use of lower carbon fuels, including renewable electricity.

Cement production contributes about 8% of global greenhouse gas emissions. What makes these emissions deemed

'hard-to-abate' is that the majority are 'process emissions' released directly from the conventional raw material, limestone. The collaborative project led by Boral aims to avoid some of these hard-to-abate emissions by developing comparable but low-carbon intensity materials that can partially substitute for limestone in the making of cement.

This campaign utilised Calix's latest renewably powered electric calciner, demonstrating the potential of the approach to produce a low-carbon intensity supplementary cementitious material (SCM). Thermal analysis and X-ray diffraction confirmed the complete calcination of the clay supplied by Boral.

Calix and Leilac continue to develop multi-pronged decarbonisation solutions through the efficient capture of process emissions, and by enabling the use of renewable energy sources and lower-carbon feedstocks to avoid CO₂ emissions.



Dr Salwan Alassafi, General Manager of Research and Development at Calix, emphasised Calix's commitment to deliver effective decarbonisation solutions for the global cement and lime industries.

"In addition to capturing unavoidable process emissions from traditional cement, the use of SCMs is an important decarbonisation pathway for the industry. Producing SCMs with renewably powered electric calcination is an exciting prospect to avoid both energy and process emissions," said Dr Salwan Alassafi.

SmartCrete CRC CEO, Clare Tubolets emphasised the collaboration's significance in driving sustainable change.

"The partnership with Boral, UTS, Transport for NSW and Calix is not just about research – it is about actionable change. By leveraging our combined expertise, we aim to accelerate the adoption of calcined clay concrete, thereby significantly contributing to the sustainability goals of the construction sector," said Clare Tubolets.

Boral's Head of Sustainability and Innovation, Dr Ali Nezhad highlighted the industry's growing demand for low embodied carbon concrete.

"We are committed to supporting our customers in their decarbonisation journey. Part of this commitment is to ensure we are well positioned to meet the growing demand for lower carbon concrete in the long term.

"As supplies of traditional SCMs like fly ash and slag become more constrained in the long term, finding reliable alternative SCMs is crucial. With clay being one of the most abundant materials in Australia, calcined clay offers a promising solution. We are excited to collaborate with SmartCrete CRC, UTS, Transport for NSW and Calix to explore its potential and bring this technology to the Australian construction industry," said Dr Ali Nezhad.

The ongoing collaboration helps to position Australia at the forefront of global decarbonisation in the cement and concrete industry by developing expertise in locally sourced and sustainably produced calcined clay. The calcined clay produced will now enable Boral and UTS to conduct further testing of the material's performance, laying the groundwork for future concrete field trials and exploring sustainable building materials.





Discover Calix's unique platform technology

Take a look behind the scenes at the Calix Technology Centre to learn more about how Calix's platform technology works, and how we are applying it to solve global challenges.





https://www.youtube.com/watch?v=T5RmHU5JQIA&t=1s

Calix partners with newly launched ARC Training Centre for solutions to anti-microbial resistance

Calix was pleased to participate in the launch of the new ARC Training Centre for Environmental and Agricultural Solutions to Antimicrobial Resistance (CEA StAR) at The University of Queensland in July. CEA StAR aims to revolutionise the approach to combating antimicrobial-resistant (AMR) infections affecting humans, animals, and the environment, and Calix is pleased to join as a partner in this collaboration to develop innovative solutions in the fight against AMR.





Visit CEA StAR website

https://imb.uq.edu.au/CEA-StAR

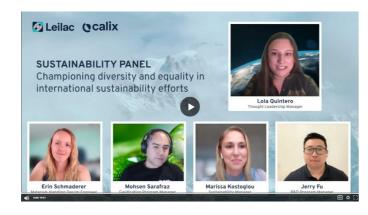




International sustainability panel: championing diversity & equality

Calix and Leilac were proud to present a special panel discussion, "Championing diversity & equality in international sustainability efforts," as part of our ongoing diversity and inclusion series. Our panellists shared their journeys, insights, and advice, highlighting the systemic changes needed to empower more diverse individuals to join and excel in sustainability careers.





Watch the panel discussion here

https://calix.global/news/championing-diversity-equality-international-sustainability-efforts/

Engineering with Rosie visits the Calix Technology Centre

We recently welcomed Rosemary Barnes from the popular YouTube channel, Engineering with Rosie, to the Calix Technology Centre. Rosie explored Leilac's groundbreaking technology, designed to revolutionise cement production and drastically reduce carbon emissions. From the basics of cement manufacturing to an up-close look at our decarbonisation technology, Rosie covers it all!





Watch the full video

https://youtu.be/plz_cMqq3_A?si=-ScXqYMvHXseZd9f

Meet the team!

Laboratory Manager, Sajeewani Fernando joined Calix because of our commitment to finding environmentally friendly and sustainable solutions for global challenges.

"By being part of the Calix team, I can bring my contribution to this greater cause and protect the world for future generations."



Meet Laboratory Manager

Sajeewani Fernando



Watch the interview with Sajeewani Fernando

https://www.youtube.com/watch?v=IP109L8ouUY



Join Calix

The Calix team continues to grow across the globe. Discover new opportunities or register your interest at the link below.



