

APRIL 2022

# Wesfarmers Chemicals, Energy and Fertilisers' Decarbonisation Journey



**Wesfarmers Chemicals  
Energy & Fertilisers**



**Wesfarmers Chemicals, Energy and Fertilisers is proud to announce details of its three-phase decarbonisation journey, which includes its Net Zero 2050 Roadmap.**

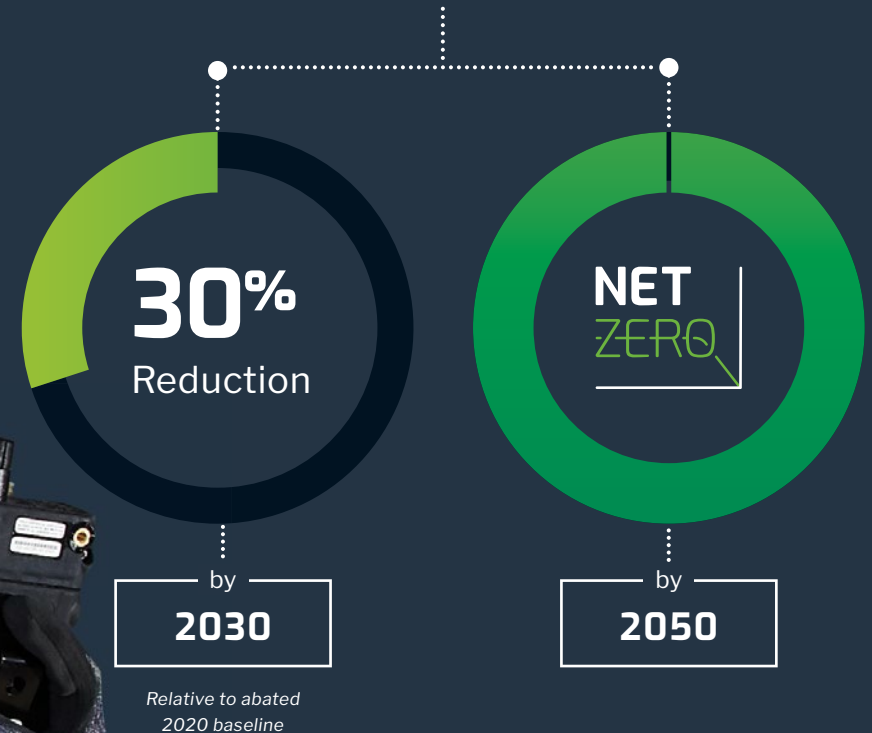
The first phase commenced in late 2012 with the installation of abatement catalysts in several of its manufacturing plants. This investment in technology delivered a reduction in cumulative CO<sub>2</sub>e emissions of 5.5 million tonnes, approximately 40 per cent, by the end of 2020.<sup>1</sup>

The second and third phases feature a Net Zero Roadmap outlining how it will achieve net zero scope 1 and 2 emissions by 2050, and includes an interim emissions reduction target of 30 per cent, relative to a 2020 baseline by 2030.<sup>2</sup>

Front cover: WesCEF Environmental Advisor Chris Marshall

CSBP Sodium Cyanide  
Senior Process Engineer  
Crystal Dias

## OUR SCOPE 1 & 2 EMISSIONS TARGETS



Accelerating our commitment to transparent value chain emissions disclosure.



**Managing Director Ian Hansen said WesCEF's three-phase decarbonisation journey positions the business on a credible pathway to reduce its own emissions as well as emissions across its value chains.**

“ We've had an aspiration to achieve net zero emissions by 2050 for some time. Now, with the amount of climate-inspired innovation in our sectors, that aspiration has become a viable target. ”

WesCEF's Net Zero Roadmap focuses on how the business will accelerate the decarbonisation of its existing operations and incorporate new technologies, like carbon capture utilisation and storage and green hydrogen, to reach net zero by 2050.<sup>3</sup>

With a focus on hard-to-abate emissions from both its production processes and electricity use, the Roadmap also recognises the importance of emissions reductions across WesCEF's supply and customer value chains, with plans to develop a scope 3 reduction pathway.

“Our targets and Net Zero Roadmap will be dynamic, and as new decarbonisation solutions emerge, we will strive to do more,” said Mr Hansen.

**Ian Hansen** .....  
**WesCEF Managing Director**





**WesCEF, a division of Wesfarmers, comprises nine industrial businesses that operate in domestic, national and international markets.**

WesCEF businesses include **CSBP Chemicals and Fertilisers**, which has a 110-year operating history in WA; natural gas provider **Kleenheat**, which is WA's largest LPG and LNG retailer; and Victoria-based PVC resin supplier, **Australian Vinyls** and **ModWood**, a composite timber decking business.

WesCEF also has a 50 per cent stake in both **Queensland Nitrates** and the **Covalent** lithium mine and refinery.<sup>4</sup>

Most of WesCEF's facilities are in Western Australia, producing and distributing essential products for the agricultural, mining, construction and manufacturing industries and energy for households for cooking, heating and hot water.



**WesCEF's portfolio of businesses provides the fertilisers that enrich crops and nourish local and international communities, the natural gas that warms our homes, and products that underpin critical existing and emerging industries.**

# Our Climate Strategy

WesCEF's Decarbonisation Journey

5

OUR  
COMMITMENT

We believe in a healthy, safe and sustainable future for all and, through our portfolio of businesses, we are committed to our target of net zero scope 1 and 2 CO<sub>2</sub>e emissions by 2050. We recognise this is critical for preserving our long-term value and creating sustainable growth.

Our decarbonisation journey began in late 2012 when we installed abatement catalysts in several of our plants, delivering a significant 5.5 million tonne reduction in emissions by the end of 2020, while still achieving increases in operating profit and growing our business.

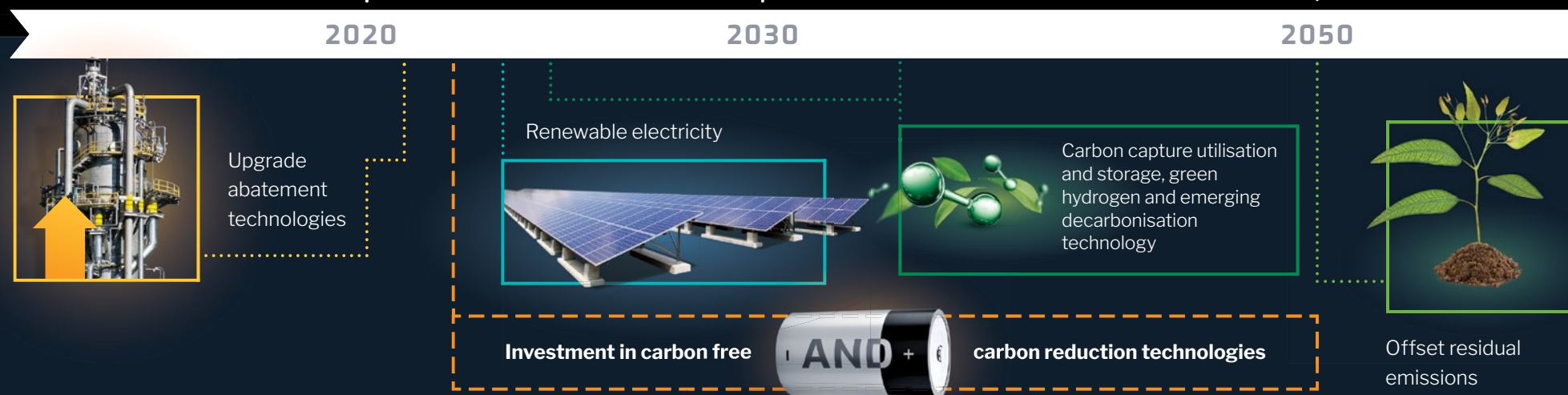
Through our wide-reaching value chains – which deliver products that are critical for agriculture, resources, mining and households – our commitment to the safety and sustainability of our industries, customers and communities remains unwavering.

We are excited to pursue opportunities presented by a decarbonising world because we believe they will deliver benefits to our team, customers, suppliers and communities, and long-term returns to our shareholders.

TARGETS



ROADMAP



ENABLERS

## TRANSPARENCY

- Additional disclosure of product emissions intensity
- Developing a scope 3 emissions pathway

## PARTNERSHIPS

- Suppliers, customers, industry and researchers to deliver decarbonisation across value chains

## CLIMATE GOVERNANCE

- Governed by Wesfarmers Ltd Climate Policy
- WesCEF Climate Opportunities Executive
- Creation of a WesCEF Climate Opportunities Project Management Office

# WesCEF's Net Zero 2050 Roadmap

SCOPE 1 + 2 EMISSIONS

2020

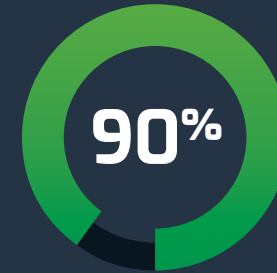
**40%**  
Reduction

*Relative to unabated  
2020 baseline*

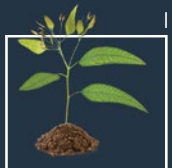
 Upgrade abatement  
technologies

2030

**30%**  
Reduction

*Relative to abated  
2020 baseline*

**of WesCEF's**  
Scope 1 & 2 emissions  
have abatement potential

2050

**NET  
ZERO**

 Offset  
residual  
emissions

 5.5MT cumulative  
abatement in Phase 1  
(2012 – 2020)

 Renewable  
electricity


## SCOPE 3 PATHWAY AND ROADMAP EVOLUTION


 Pilot of carbon capture  
utilisation and storage  
and green hydrogen

 Evaluate emerging  
decarbonisation  
solutions

 Large scale  
green hydrogen

 Large scale  
carbon capture  
utilisation and storage

PHASE ONE



PHASE TWO



PHASE THREE



# Significant emissions reductions achieved in first phase

The 2050 net zero target builds upon WesCEF's longstanding commitment to sustainability and its strong history of emission abatement achievements.

Managing Director Ian Hansen said while WesCEF's Net Zero Roadmap reflects the organisation's recognition that future growth is linked to achieving net zero emissions by 2050, its decarbonisation journey began ten years ago with the use of abatement catalysts in several of its manufacturing plants, abating 5.5 million tonnes of greenhouse gas emissions during this first phase.

"We are enormously proud of what we have accomplished from being a 'carbon aware' business. We leverage our track record of technical innovation, efficient design and operations, reputation for reliability and safety, along with our committed 1,400-strong workforce, to continue to significantly reduce our greenhouse gas emissions."

He pointed out that managing assets in 'hard-to-abate'<sup>5</sup> sectors with a focus on protecting the environment was, and continues to be, both a priority and a challenge.



“ I am part of a business and team that prioritises sustainability. Our efforts include generating more than 75 per cent of CSBP Kwinana's electricity requirements through the recovery of heat from our chemical plants. ”

- CSBP Sodium Cyanide Process Engineer Mel Flux



## Second phase focused on new interim target

WesCEF is currently in the second phase of its decarbonisation journey. For this phase, it has set an interim emissions reduction target of 30 per cent by 2030.

"We are exploring a number of ways to achieve this, including upgrading existing abatement technologies as well as by adopting renewable energy for the portion of electricity we do not generate ourselves," said Mr Hansen.

"Traditionally, businesses which operate plants continuously throughout the day and night are limited in sourcing renewable energy due to the fact that wind and solar energy is only generated when it's windy or sunny. However, there are an increasing number of options that make renewable energy more viable for businesses like WesCEF, and those options include renewable power purchase agreements or long-duration electricity storage solutions.

"Another focus of this second phase is to establish the processes and partnerships, as well as explore and prove the technologies, that will be deployed in phase three and enable us to achieve our ultimate goal of net zero by 2050," he said.



“ WesCEF currently supplies ~50,000 tonnes per annum of CO<sub>2</sub> for end use in the food, beverage and metals industries. From this strong foundation, we're actively looking at ways to develop more applications for the CO<sub>2</sub> we produce. ”

- CSBP Manager Chemicals Strategic Projects  
John Backhouse





## Third phase focuses on new and emerging technologies

The third phase of WesCEF's decarbonisation journey signals a reduction of emissions by a further 60 per cent by 2050. This will leave WesCEF with approximately 10 per cent of its baseline emissions unabated (a 90 per cent reduction overall). Carbon offsets will be utilised for the remaining emissions if no technological solutions emerge.

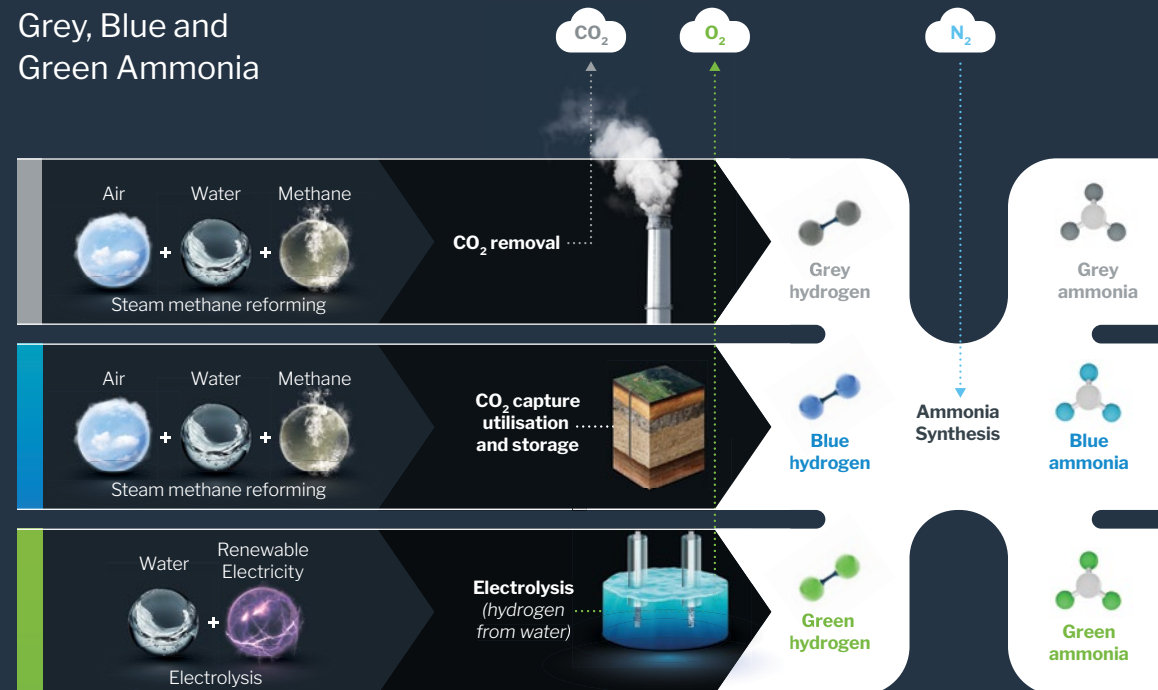
WesCEF currently makes hydrogen as an input for its ammonia production, and decarbonising hydrogen production is a critical enabler for the business to achieve its net zero target.

"It also offers exciting growth prospects for WesCEF since many of our customers are looking to transition to sustainable fuels," said Mr Hansen.

"The investigation, evaluation and potential piloting of carbon capture and utilisation and storage solutions for blue hydrogen, as well as electrolysis for green hydrogen in the second phase, lay the foundation for the organisation's important third phase.

"It is too early to tell which of these technologies will ultimately succeed, or if new solutions will emerge, but we are excited by the opportunities that they present."

Grey, Blue and Green Ammonia



“ We have worked hard to identify both near and long-term transformational actions to play our part in addressing global climate challenges. These actions are essential for preserving our long-term value and creating sustainable growth. ”

- WesCEF General Manager Climate Opportunities  
Mussaret Nagree



## Opportunities ahead

WesCEF's decarbonisation transformation will depend upon new and emerging technologies and collaboration with industry and researchers to identify, study and deploy low-emissions technologies.

WesCEF Managing Director Mr Hansen said he was optimistic that the technologies to abate the majority of WesCEF's process emissions would become commercially viable.

"We're excited by the pace of innovation in this area and expect there to be additional growth opportunities as climate-friendly products and technologies emerge.

"Advancing the decarbonisation of WesCEF is critical if we are to continue to deliver sustainable growth over the long term. Any new opportunities or investment will align with our net zero targets," he said.

**A growth opportunity for WesCEF that supports our future in a decarbonised world is our investment in lithium.**



Lithium hydroxide produced from Covalent's WA mine and refinery each year will power one million battery electric vehicles.



10% of current global CO<sub>2</sub> emissions come from internal combustion vehicles.<sup>6</sup>



The uptake of electric vehicles is a critical building block in driving the world's transition to a carbon free economy.



It is anticipated that USD 500 billion will be spent over the next 10 years to build battery and electric vehicle manufacturing capacity. By 2030, electric vehicle sales are expected to reach +30 million (1 in 3 cars sold will be electric).





## Committed to Transparent Reporting

The commitment to transparent reporting is not new to WesCEF. WesCEF's CSBP chemicals business already discloses its ammonium nitrate emissions intensity and has been progressively measuring and reporting its scope 3 emissions since 2009.<sup>7</sup>

"While this is an important and valuable first step, we need to do more to help our customers take account of emissions in their procurement decisions," Mr Hansen stated.

"WesCEF will complete the measurement of its scope 3 emissions in 2022. Full transparency of emissions across our value chains will enable us to work collaboratively with our customers and suppliers to deliver the decarbonisation outcomes we are all seeking."

“ I'm excited about how we are working with our customers to not only share our product emission profiles but also help them on their individual decarbonisation journeys. ”

- CSBP Fertilisers Field Research Manager Justin Mercy



## Partnering for Progress

Build partnerships with suppliers, customers, industry and researchers to deliver decarbonisation across value chains.

Founding member of the Australian Industry Energy Transitions Initiative.

Member of the Australian Hydrogen Council.

Partnership with APA to explore producing and transporting green hydrogen via a gas pipeline.

Partnership with Mitsui & Co to explore feasibility of building a low carbon ammonia plant including a carbon capture and storage solution.

Sponsor of CSIRO's CO<sub>2</sub> Utilisation Roadmap.

Member of a consortium, led by Jupiter Ionics, to develop breakthrough green ammonia technology.





# Our Climate Culture



Work with all our stakeholders to accelerate action towards net zero across the value chains in which we operate.



Embrace a phased transition, addressing quick wins first, while making meaningful progress on long-term solutions.



Recognise success requires experimentation and learning. We will pilot and trial new technologies.



Continue to enhance our value chain emissions disclosure, including a scope 3 pathway, and be transparent in all our reporting.



Review our net zero roadmap annually and increase our level of ambition as new technologies become commercially viable.



Undertake major investments only if they have a clear and credible path to net zero by 2050.



Proceed with product volume growth only if it reduces the emissions intensity of that product over the investment horizon.

**NET  
ZERO**



“ I’m really proud to work for a business that takes its responsibility to future generations seriously. ”

- Kleenheat Customer Service Officer Luke Righetti

# Climate Governance

WesCEF is a division of Wesfarmers, a diversified conglomerate listed on the ASX and one of the nation's largest employers with more than 100,000 employees.

The Wesfarmers Board has responsibility for managing the Group's response to climate change. Climate change risk management is part of Wesfarmers' Operating Framework and is an agenda item for the Wesfarmers Board and its Audit and Risk Committee.

Wesfarmers requires all of its businesses to include emissions forecasts as part of its annual corporate planning process and, since 2014, has considered an internal shadow carbon price as part of capital allocation decisions for projects.

In 2017, Wesfarmers commenced reporting under the Taskforce on Climate Related Financial Disclosures (TCFD) standards and has found this framework valuable to understand the many dimensions of climate change.

Scenario analysis plays a fundamental role in Wesfarmers' climate strategy and risk management approach. Wesfarmers and its divisions evaluate the risk and opportunities presented by climate change under three global warming scenarios: 1.5°C, 2°C and 4°C.

Further details found at:

**Wesfarmers website under Corporate Governance/ Climate Change Policy.**

## WESFARMERS GROUP

- A Group Climate Change Policy sets minimum standards expected of our divisions
- Quarterly Carbon and Energy Forums are held across the Group to share best practice
- A shadow carbon price is built into Wesfarmers' Capital Expenditure Policy
- Risk tools are used to undertake scenario analysis

### Wesfarmers Board, Audit and Risk Committee

- Receives regular reporting
- Provides governance over climate change risks
- Sets risk appetite

## WESCEF

### WesCEF Board and Audit, Risk and Compliance Committee

- Receive regular reporting of emissions and energy use
- Provide governance over climate change risk and supports the prioritisation of opportunities

### WesCEF Executive Leadership Team

- Newly created role General Manager Climate Opportunities is a member of the WesCEF Executive Leadership Team and has oversight of the WesCEF Climate Project Management Office
- Sets WesCEF's Climate Policy in keeping with Wesfarmers' overarching Climate Policy guidance
- Has responsibility for updating and implementing WesCEF's Net Zero Roadmap and emissions reductions targets
- Reports on emissions performance and opportunities to the WesCEF Board and Audit, Risk and Compliance Committee

### WesCEF business units and shared services teams

- Implement Climate Policy
- Have robust processes for recording emissions data
- Implement carbon reduction projects
- Meet regularly with their counterparts across the Wesfarmers Group to share best practice in emissions management



## FOOTNOTES

<sup>1</sup> The first phase of WesCEF's decarbonisation journey refers to the period FY2012-2020. During this time, WesCEF installed and maintained nitrous oxide abatement catalysts in its nitric acid plants.

The nitrous oxide abatement catalyst reduces nitrous oxide by 80 per cent or more by converting nitrous oxide into inert nitrogen and oxygen gas. The catalyst is of pelleted configuration, which degrades over time and requires periodic replenishment to maintain optimal abatement.

These catalysts delivered cumulative abatement of 5.5 million tonnes of CO<sub>2</sub>e from when they were installed in 2012 to the end of the first phase in 2020.

All references to years are financial years: 2020 = FY2020.

<sup>2</sup> Relative to an FY2020 baseline of ~955,000 tonnes CO<sub>2</sub>e, which incorporates the abatement already delivered. If it were not for this abatement the baseline would be ~1.7 million tonnes CO<sub>2</sub>e. The baseline also reflects the revision in the global warming potential of nitrous oxide from 298 times that of carbon dioxide to 265 times and the revision of the global warming potential of methane from 25 times that of carbon dioxide to 28 times.

WesCEF's baseline emissions will be updated in the event of significant portfolio changes, such as material changes to production volumes and mergers, acquisitions and divestments. It will also be updated to reflect changes in greenhouse gas emission reporting protocols. Should changes to the baseline be made, the 2030 interim reduction target may also change. Baseline emissions are stated net of CO<sub>2</sub> sales of approximately 50,000 tonnes per annum.

<sup>3</sup> Green hydrogen refers to the production of hydrogen via the electrolysis of water powered by renewable electricity. WesCEF currently produces approximately 50,000 tonnes of hydrogen per annum via steam methane reforming, for use in its ammonia manufacture. WesCEF's Net Zero 2050 target assumes that new abatement technologies will become commercially viable and operate at scale well before 2050 and that government policy will be supportive of climate change action.

<sup>4</sup> WesCEF's scope 1 and 2 emissions baseline and targets do not include or relate to emissions from businesses not controlled by WesCEF, such as Queensland Nitrates and Covalent.

<sup>5</sup> Hard-to-abate sectors are those that are widely recognised as having no readily available or commercially viable technology to abate their carbon emissions.

<sup>6</sup> Bloomberg 2020: Emissions by Sector.

<sup>7</sup> Commencing in 2022, the emissions intensity of WesCEF's ammonium nitrate will be reported by 31 March each year.

**Baljit Singh**  
**ModWood Day Shift Supervisor**





**Wesfarmers Chemicals  
Energy & Fertilisers**

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