UMAG

Universidad de Magallanes

Tu Norte está en el Sur

Your North is in the South

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Comisión Nacional de Acreditación CNA-Chile

Universidad Acreditada
Nivel Avanzado
Áreas: Gestión Institucional; Docencia de Pregrado; Investigación y Vinculación con el Medio
Próxima acreditación 31 de diciembre de 2028

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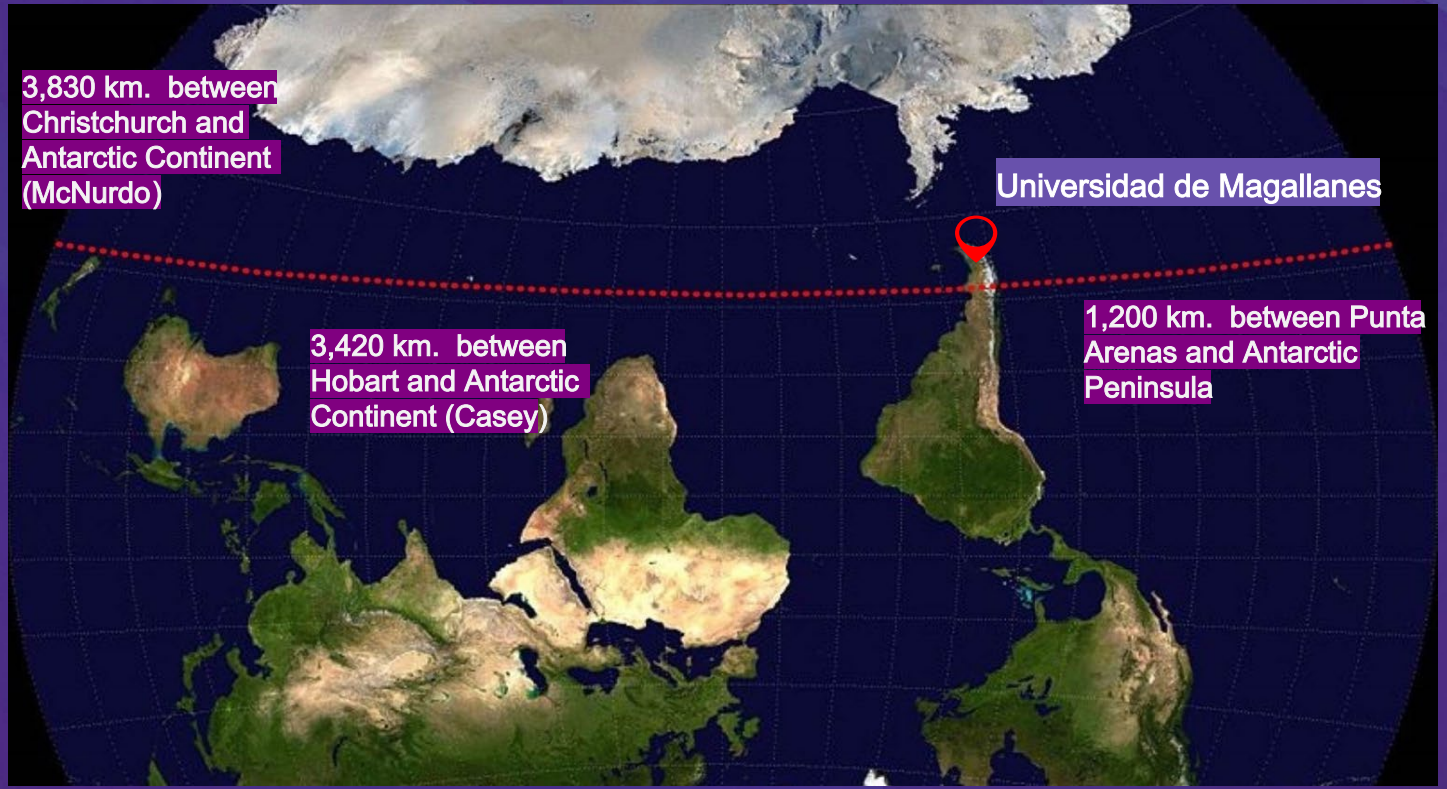
Building Bridges: Initial Discussions on Partnership Opportunities between Chilean and Australian Regional Universities

The University of Magallanes location and the Potential of RUN - AUR Collaborations

Clean Energy and Sustainability Symposium

Dr. JoséMaripani, Rector de la Universidad de Magallanes

Marzo 2024


3,830 km. between Christchurch and Antarctic Continent (McNurdo)
Universidad de Magallanes
3,420 km. between Hobart and Antarctic Continent (Casey)
1,200 km. between Punta Arenas and Antarctic Peninsula

Exploring the Foundations: Key Theoretical Frameworks for International Partnerships and Collaboration Models

Theoretical Models and Frameworks Shaping International Partnerships and Collaborations in Academia

- **Uppsala Internationalization Model (1977)**

Incremental internationalization based on experiential learning.
Authors: Johanson and Vahlne.

- **Network Model (Mid-1980s)**

Emphasizes the importance of networks and relationships.
Application in academic partnerships.
Autor: Lars-Gunnar Mattsson, Peter J. Buckley and Mark Casson

- **Knight's Model of Internationalization (1997)**

Integration of international dimensions into education, research, and service.
Author: Jane Knight.

Theoretical Models and Frameworks Shaping International Partnerships and Collaborations in Academia

- **Triple Helix Model (Late 1990s)**

Interaction between universities, industry, and government.
Authors: Etzkowitz and Leydesdorff.

- **Marginson and Rhoades's "Glonacal" Agency Heuristic (2002)**

Universities influenced by global, national, and local dimensions.
Authors: Marginson and Rhoades.

- **Global Engagement Model**

Focus on addressing global challenges through comprehensive engagement. Emphasis on sustainability and global issues

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Jane Knight's Models

Knight, J. (2015). International universities: Misunderstandings and emerging models?. Journal of studies in international education, 19(2), 107-121

1. Classic Model

• Definition: A broad approach involving intercultural and international initiatives in academic, research, service, and management.

• Activities: Collaborations with partner universities, research centers, and agencies for student/scholar mobility, joint programs, and research projects.

2. Satellite Model

• Definition: Establishes international presence through off-campus sites like research centers and branch campuses.

• Focus: Strategic development of research, teaching, or management offices abroad for specific purposes including alumni relations and student recruitment.

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3. Co-Founded Model

• Definition: Creation of new, independent universities through international collaborations.

• Characteristics: Standalone institutions co-founded by multiple international partners, distinct from branch campuses.

• Examples: Singapore University of Technology and Design, German University of Technology in Oman, Nazarbayev University.

Classic Models of Collaboration

- Joint research projects
- Faculty and student exchange programs
- Collaborative curriculum development
- International conferences and workshops

Student Exchange ProgramsDating back to the post-WWII era, these focus on reciprocal student mobility for a defined period.

Early proponents include the Fulbright Program (1946) and the Erasmus Program in Europe (1987)

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The Value of International Partnerships

- Knowledge Exchange and Innovation: Access to diverse research perspectives, methodologies, and resources.
- Globalized Education: Student and faculty exchange for multicultural learning, language skills, and global citizenship development.
- Capacity Building: Universities can share expertise to enhance teaching quality, research capabilities, and administrative processes.
- Reputation and Influence: Successful partnerships elevate the profile of institutions on the international stage.

The Theory of Comparative Advantage in International University Partnerships

The Power of Specialization and Collaboration

- Comparative advantage: Economic principle suggesting entities benefit from focusing on their relative strengths.
- University context: Universities excel in different fields (e.g., research areas, specific programs).
- Partnership rationale: Mutual gains by leveraging each other's strengths, avoiding unnecessary competition.

The Theory of Comparative Advantage in International University Partnerships

The Power of Specialization and Collaboration

Challenges & Considerations:

- Application Limits: Shift from tangible goods to knowledge and services.
- Power Dynamics: Need for equitable collaboration acknowledging resource disparities.
- Beyond Economics: Partnerships as strategic, cultural, and long-term engagements.

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- Research collaborations: Combine expertise, access wider knowledge pools, share resources, enhance research impact.
- Exchange programs: Facilitate knowledge transfer, promote cross-cultural understanding, access complementary programs.
- Joint degree programs: Leverage specialized offerings from multiple universities, create more attractive degrees.
- Resource sharing: Access to libraries, specialized equipment, databases.
- Global reputation: Enhance visibility, signal commitment to quality, boost institutional reputation.

Benefits of International Partnerships Driven by Comparative Advantage

How Comparative Advantage Shapes Collaboration

Magallanes Region

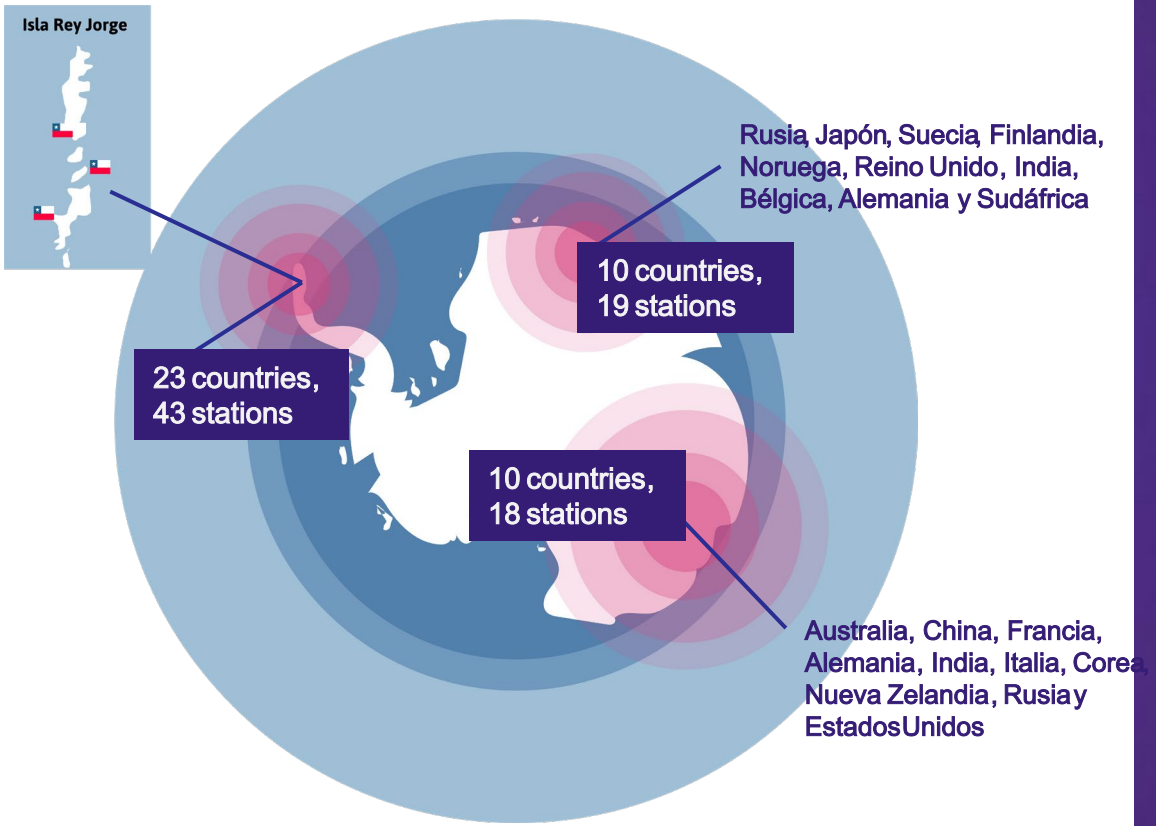
Comparative Advantages
Gate to Antarctic

FACTS

Antarctic Sector / Stations
South America: 43
Africa: 19
Australia – N.Zealand: 18

1. Argentina
2. Brazil
3. Bulgaria
4. Chile
5. China
6. Czech R.
7. Ecuador
8. Germany
9. Netherlands
10. Perú
11. Poland
12. R. of Korea
13. Russia
14. Spain
15. Ukraine
16. U.Kingdom
17. United States
18. Uruguay

Without Stations:
19. Colombia
20. Malasia
21. Portugal
22. Turkey
23. Venezuela



Intercontinental runways used by Tourism Airlines

IAATO Operator	Flight origin	Intercontinental Runway	Aircraft types	Rotations 2018-19
Antarctic Logistics & Expeditions	Punta Arenas, Chile	Patriot Hills Union Glacier	Ilyushin IL76-TD Dassault Falcon 7X Boeing 757	25
DAP	Punta Arenas, Chile	Rodolfo Marsh	BAE 146-200 King Air 300	130
White Desert	Cape Town, South Africa	Wolf's Fang	Gulf 550 Gulf 650ER	22
The Antarctic Company	Cape Town, South Africa	Novolazarevskaya Perseus	Ilyushin IL76-TD90 Boeing 757	5

Universidad de Magallanes: Subantarctic research in Cape Horn

Total area of 2,582 m2

Their objective is to promote the knowledge and conservation of the Magellan Sub-Antarctic region through scientific research, education, and sustainable tourism.

Project: International Antarctic Center

GOBIERNO REGIONAL DE MAGALLANES Y DE LA ANTÁRTICA CHILENA

UMAG Universidad de Magallanes

INSTITUTO ANTÁRTICO CHILENO MINISTERIO DE RELACIONES EXTERIORES

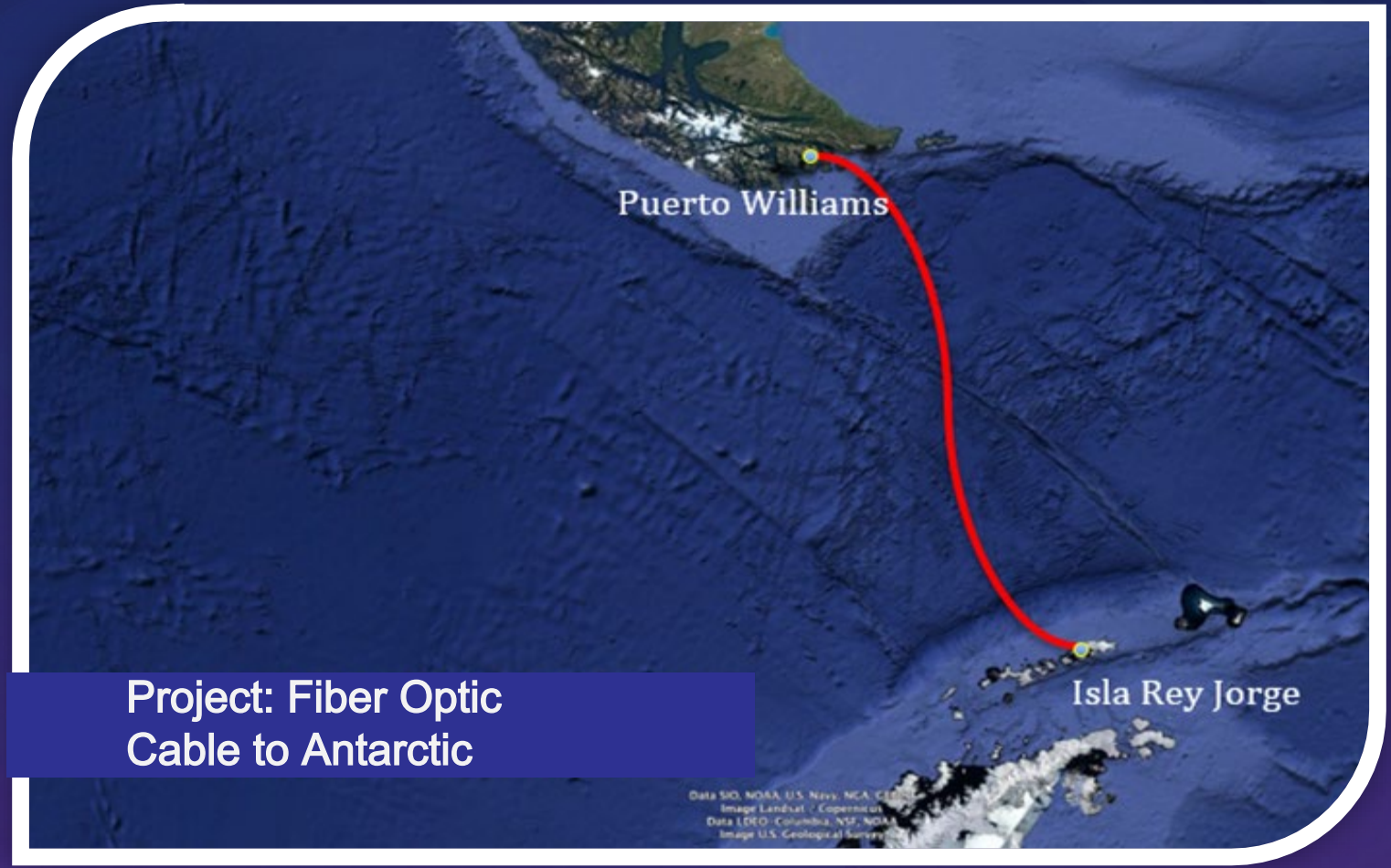
Total area of 32,930 m2.

Status: in bidding process

Project: International Antarctic Center

Magallanes Region Investment Initiative: Fueled by the Regional and National Government's Support
Core Objectives:

- Transform Magallanes into a Prime Gateway to Antarctic.
- Enhance Research Capabilities to global standards.
- Foster International Collaborations with premier universities and research institutes.
- Total area of 32,930 m2.
- Status: in bidding process


Puerto Williams
Isla Rey Jorge
Project: Fiber Optic
Cable to Antarctic

Magallanes Region

Comparative Advantages Decarbonization Hub

Green Hydrogen in Magallanes: Reality and Projections

Magallanes and the Chilean Antarctic Region

1% of the national population

Connectivity by air and sea

- ✓ 2nd region in per capita income
- ✓ Lowest poverty rate
- ✓ Lowest illiteracy rate
- ✓ Second lowest unemployment rate

GEI

Carbon Negative Region
↕
13 ton CO2/inhabitants

Tourism
10%

Salmon Farming
4%

Petrochemicals

ENAP

methanex
the power of agility

Magallanes and the Chilean Antarctic Region

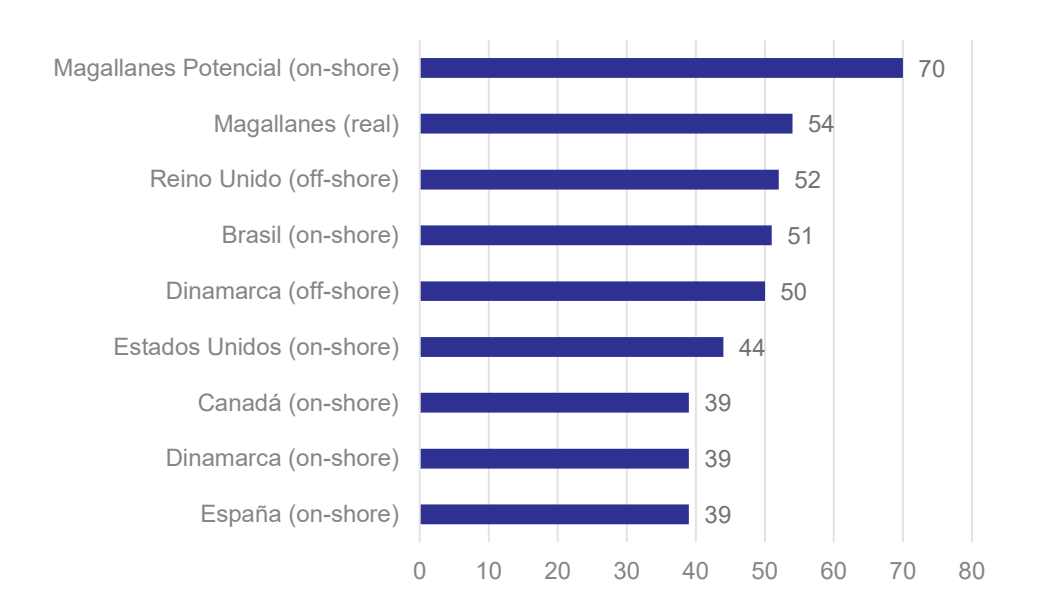
High availability of water and wind resources

Underutilized oil infrastructure

Tax advantages (investment, production, and importation)

Land concentration

Plant Factors 54% (70%)



Synthetic Fuels Laboratory

1st synthetic fuels laboratory in Chile.

Approximate investment of
800 - 1 million USD.

Provision of laboratory services
to e-fuel producers.

Pilot Plant: Haru Oni

Pilot Project for Decarbonization and Production of Carbon-Neutral Fuels

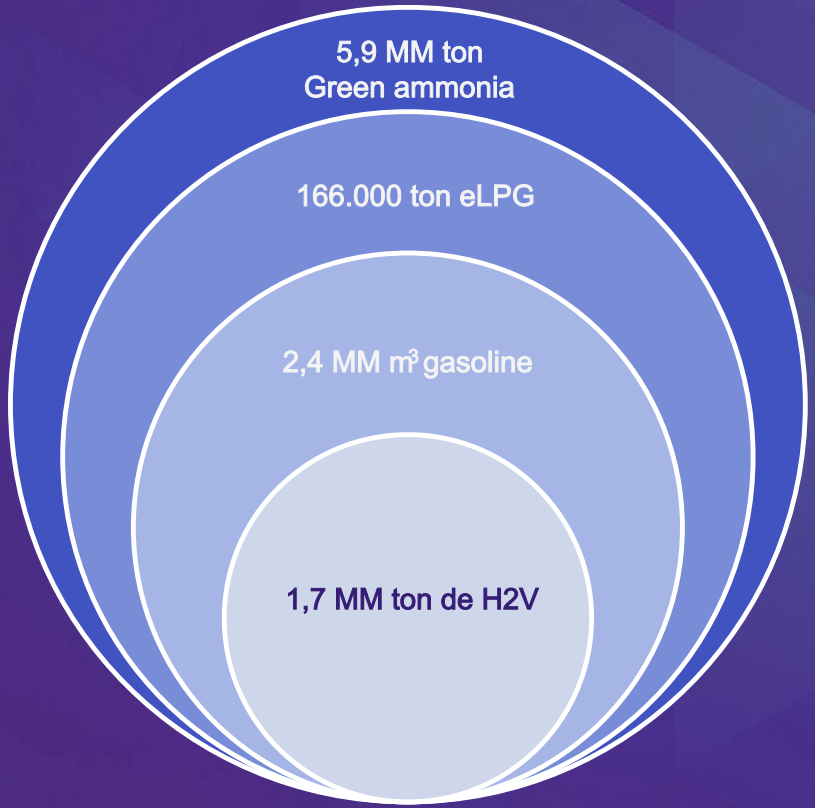
750.000 liters per year of e-Methanol

130.000 liters per year of e-gasoline

Currently: SEIA for stage 1

PROJECTIONS

Principal Scenario



- ✓Total investment of US$ 29 billion (2050).
- ✓5,000 wind turbines (15GW)
- ✓Exports US$ 5000 million (2050)
- ✓Projected GDP US$ 6.900 million (2050)
- ✓3,600 workers + 3,000 professionals (20242041)
- ✓3,000 direct jobs (2050)
- ✓1,400 associated jobs (2050)

International Partnerships for Universidad de Magallanes

Harnessing Global Collaboration for Antarctic Research and Green Hydrogen Leadership

Unique Advantages:

- World's southeastern-most university
- Gateway to Antarctica
- Pristine environment ideal for research
- Immense green hydrogen potential

International Partnership Models:

- Network-based Models
- Strategic Partnerships
- Industry-led Collaborations

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International Partnerships for Universidad de Magallanes

Harnessing Global Collaboration for Antarctic Research and Green Hydrogen Leadership

Overview:

- Total Agreements: 51+
- Countries Involved: Multiple, including USA, Japan, Spain, Brazil, Germany, and more.
- Sectors Covered: Academic, Scientific, Cultural, Research, Student & Faculty Exchange.

International Industry:

HIF 2024 SIEMENS energy

TOTAL eren 2025

vivre les cultures INSTITUT FRANÇAIS Chile

Scholarships for students: Collaboration Agreement between UMAG and the French Institute of Chile. Cooperation Agreement for Research Stay Scholarships Chile-France Financing Program

International agreements with UMAG

Another dozen agreements are added in process

Visits from diplomatic, university, and industrial delegations

During 2023 there were 14 meetings with delegations from Austria, Spain, the United States, Germany, China and Ireland, among others.

So far in 2024 we have already held seven meetings with delegations from the United Kingdom, China, Finland, Paraguay, Spain and Brazil.

Visits from diplomatic, university, and industrial delegations

Visits from diplomatic, university, and industrial delegations

RUN-AUR

Comparative Advantages

Similarities between the areas in Chile and Australia where RUN and AUR universities are located

Desert Areas:

- Chile: The Atacama Desert, the driest non-polar desert in the world, is located in the northern regions where several AUR universities operate.
- Australia: Large swaths of central and western Australia are arid or semi-arid. RUN universities likely encompass some of these areas.

Shared Challenges: Water scarcity, extreme temperatures, specialized agriculture, and potential for solar energy development.

Similarities between the areas in Chile and Australia where RUN and AUR universities are located

Mining Areas:

- Chile: Major mineral producer (copper, lithium, others), with mining operations primarily concentrated in the north and central regions.
- Australia: Significantly relies on its mining industry (iron ore, coal, gold, etc.), with activity spread across the country.

Shared Focus: Sustainable mining practices, environmental impact mitigation, and engagement with local communities surrounding mines.

Similarities between the areas in Chile and Australia where RUN and AUR universities are located

Potential Solar Energy Areas:

- Chile: The Atacama Desert boasts some of the highest solar radiation levels globally, making it a prime location for solar farms.
- Australia: Vast areas with abundant sunshine make the continent ideal for large -scale solar energy projects.

Shared Potential: Research collaboration on solar technologies, grid integration, and addressing the challenges of energy generation in remote areas.

Similarities between the areas in Chile and Australia where RUN and AUR universities are located

Windy Areas:

- Chile: Long coastline exposed to strong winds, especially in the south (Magallanes)
- Australia: Southern and Western coastlines experience substantial winds (Perth, Adelaide, Melbourne, Tasmania)

Shared Potential: Research collaboration on wind technologies, grid integration, and addressing the challenges of energy generation in remote areas.

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