



Greening U-I Partnerships – Emerging Opportunities on Climate Change Response

September 17, 2021 | 10:45 - 11:30 AM ET



Moderator:
Anna-Marie Greenaway
University of Cambridge



Tomas Coates Ulrichsen
University of Cambridge



Amit Paithankar
Emerson

Mobilising University-Industry- Government Partnerships to Tackle the Climate Crisis:

Insights from the Oxford Summit 2021

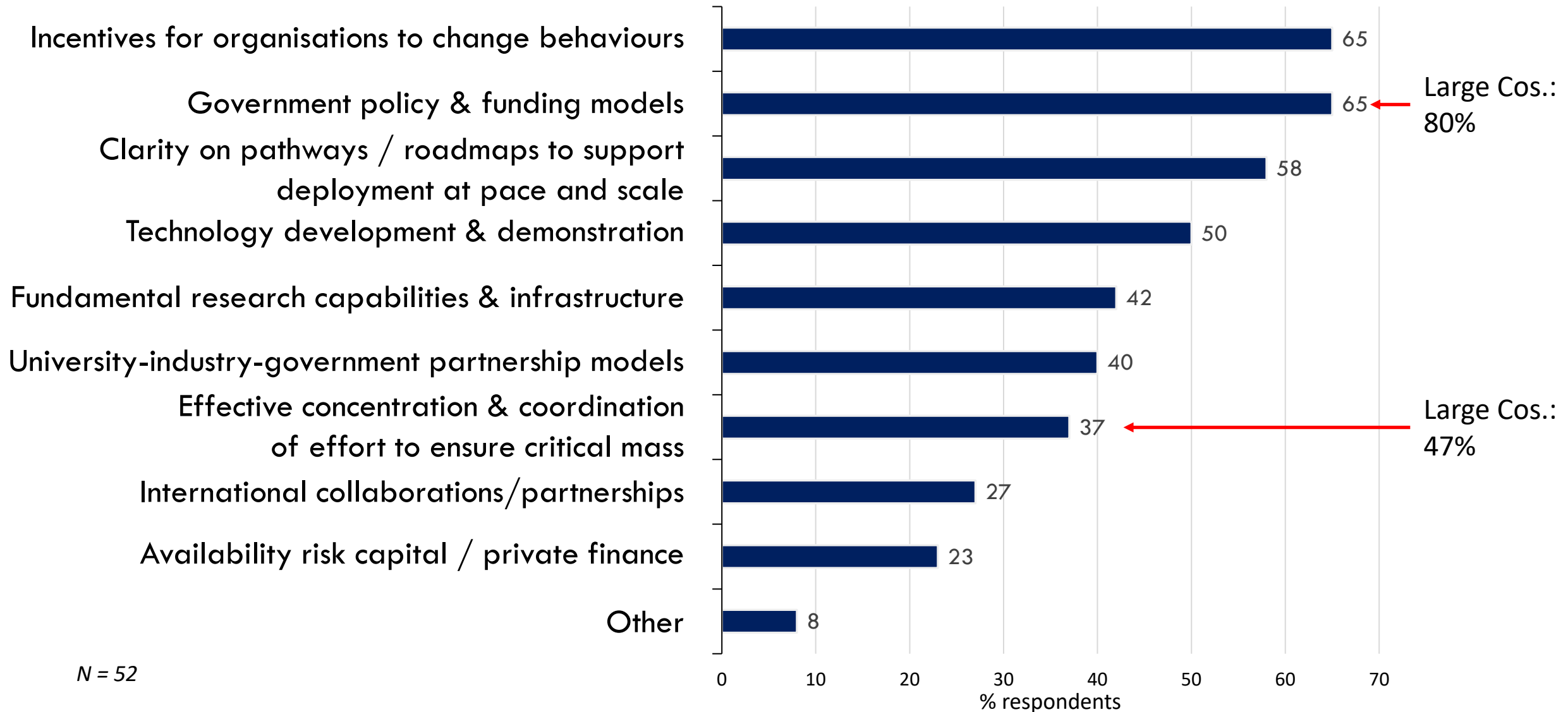
Tomas Coates Ulrichsen



UNIVERSITY OF
CAMBRIDGE

September 2021

Areas of greatest need for change



N = 52

System-wide changes are necessary

- Need major **behavioural change at societal level** – must mitigate potential disruption
- Need **big and bold vision** and ambitions – clear/standardised messaging
- **Attitudes to risk** must change – more focus on disruptive innovation & tolerance of failure
- Importance of **roadmaps & targets** – clear directions, play to strengths, minimise duplication
- Must adopt a **systems approach** to tackling challenges
- Need **different types of funding** – demonstration, more agile, high-risk-high-reward
- Must get better at **technology scale-up/demonstration** linking discovery to deployment
- Key role for **governments in de-risking** nascent markets for critical technologies
- Stronger **international collaboration** required at all levels from vision setting to problem definition to developing solutions

Greening Partnerships to Tackle Climate Crisis

Reconfigure partnerships to accelerate process

- **New organisational environments** – prototyping, demonstrating, deploying techs
 - **More agile multi-functional teams** bringing together range of capabilities able to anticipate & address critical challenges along lab-to-market journey
 - **Social sciences as crucial** part of greening partnerships
-

Leverage nature, position & scale of universities in society

- **Greening campuses** – leading by example
 - **Universities as test-beds / living labs** to demonstrate what can be done
-

Address long-standing issues

- **Better incentives** for academics to engage in partnering
- **Greater mobility** of staff
- **Approaches to IP** – is system fit for purpose for tackling major societal challenges?
- **Better understand needs**, capabilities, constraints, cultures to improve working across boundaries



Summit Report
publication due in late
Autumn 2021

UCI University
Commercialisation
& Innovation
Policy Evidence Unit

Thank You!

Tomas Coates Ulrichsen
tc267@cam.ac.uk

GREENING OF

Reducing GHG emissions intensity by 20% across +200 major sites by 2028.

Enlisting our energy providers, supply chain partners, & logistics services to support similar objectives.

Embedding sustainability focus throughout our management process.

ENERGY TREASURE HUNTS

Participation: Sustainability site team & subject matter experts

Process: Evaluate energy use weekday & weekend.

Prioritize: Largest energy usages, improvement opportunities, capital



Equipment Shutdown



Building Control Systems



Compressed Air Optimization

HIGHLIGHTS



- Onsite Power Generation
- 2.6MW rooftop solar in Dubai

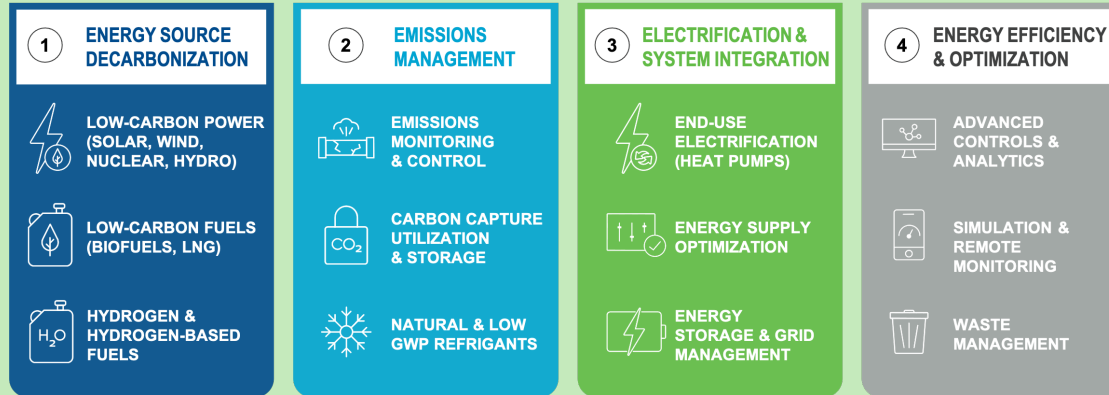


Renewable Energy Purchases

76,000 sqm Cluj, Romania (100% Renewable Energy)

GREENING BY

Providing products, expertise, solutions & services to help our customers transition to lower carbon by:



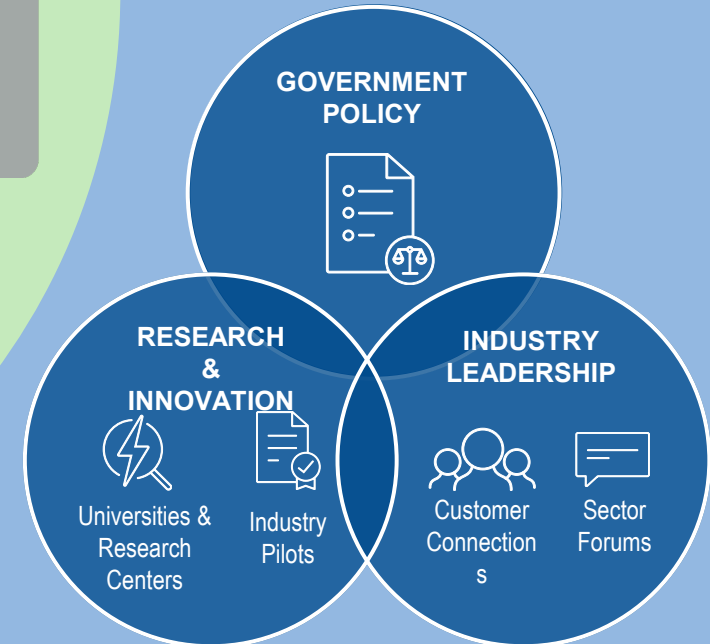
GREENING WITH

Engaging external stakeholders:

Partnering to develop innovative solutions

Participating in sector & customer initiatives

Sharing expertise to shape future policy globally



Emerson committed to a 20% Greenhouse Gas emissions intensity reduction target by 2028

Committed to **20% reduction** of GHG intensity measured at **200 sites globally**

Led By Board of Directors

Environmental Sustainability Steering Committee

Embedded in the Management Process

Environmental Sustainability Leaders and Teams at Every Site

LEADING ENGAGEMENTS

Energy Suppliers

Supply Chain

Logistic Partners

HIGHLIGHTS



- Onsite Power Generation
- 2.6MW rooftop solar in Dubai



- Renewable Energy Purchases**
- 76,000 sqm Cluj, Romania
 - 100% Renewable Energy



Reduction in energy usage & Increasing renewable energy

ENERGY TREASURE HUNTS

Participation: Sustainability site team and internal subject matter experts

Process: Evaluate energy usage weekday and weekend. Look, listen, measure

Prioritize: Largest energy usages, improvement opportunities, capital

TOP FACILITY OPPORTUNITIES



Equipment Shutdown



LED Lighting



Building Control Systems



HVAC Setback



Compressed Air Optimization



Cleaning & Temp. Chambers

Emerson is highly relevant in a lower carbon future

Four Major Strategies for Environmental Sustainability

1 ENERGY SOURCE DECARBONIZATION



LOW-CARBON
POWER (SOLAR,
WIND, NUCLEAR,
HYDRO)



LOW-CARBON
FUELS
(BIOFUELS, LNG)



HYDROGEN &
HYDROGEN-BASED
FUELS

2 EMISSIONS MANAGEMENT



EMISSIONS
MONITORING
& CONTROL



CARBON CAPTURE
UTILIZATION
& STORAGE



NATURAL & LOW
GHG REFRIGANTS

3 ELECTRIFICATION & SYSTEM INTEGRATION



END-USE
ELECTRIFICATION
(HEAT PUMPS)



ENERGY SUPPLY
OPTIMIZATION



ENERGY
STORAGE & GRID
MANAGEMENT

4 ENERGY EFFICIENCY & OPTIMIZATION



ADVANCED
CONTROLS &
ANALYTICS



SIMULATION &
REMOTE
MONITORING



WASTE
MANAGEMENT



Triple Helix Partnerships with National Labs

September 17, 2021 | 12 - 12:45 PM ET



Kim Budil
Lawrence Livermore
National Laboratory



Michael Amiridis
University of Illinois Chicago

THANK YOU!



- Did you enjoy the session? Rate it in the Attendee Hub!
- You'll receive a survey via email about UIDPConnect at the end of the week. Please give us your feedback.



Strengthening
University-Industry
Partnerships