

## ΕΠΙΛΕΓΜΕΝΑ ΕΡΕΥΝΗΤΙΚΑ ΠΡΟΓΡΑΜΜΑΤΑ

**Ερευνητικό Πρόγραμμα: «CLIMATE CHANGE ADAPTATION STUDY FOR ATHENS INTERNATIONAL AIRPORT “EL. VENIZELOS”» Ε.Ε. 5872, Πανεπιστήμιο Θεσσαλίας - Τμήμα Πολιτικών Μηχανικών, ΔΙΕΘΝΗΣ ΑΕΡΟΛΙΜΕΝΑΣ ΑΘΗΝΩΝ Α.Ε. 11/2018.**

This Research Programme includes a comprehensive risk assessment of Climate - related risks to the direct and indirect operations of A.I.A. The role of the Consultant was to:

- **perform** a comprehensive risk assessment of climate-related risks to the direct and indirect operations of Athens International Airport and to its assets, and,
- **collect and analyse** historical climate data as well as future climate scenarios for the region in which the airport operates.

**Decarbonizing aviation** is arguably the greatest challenge facing the air transport industry. If decision-makers had to choose just five top things to do to achieve net zero carbon aviation by 2050, they should focus on the following:

<b>1</b>	Change the European Air Traffic Management network, and encourage environmental improvements through provision of shorter and better routes.
<b>2</b>	Support the rapid transition to the widespread use of Sustainable Aviation Fuels for long-haul flights in particular. SAF is too expensive and we must incentivise its production and use.
<b>3</b>	Develop highly-efficient, large-capacity, short-haul aircraft to handle passenger throughput.
<b>4</b>	Undertake a total fleet renewal by 2050 so that aircraft only fly if they are wholly or partly electric, or for long-haul flights only use SAF.
<b>5</b>	Bridge the gap to electrification of short-haul passenger aircraft through hybridisation and improving battery energy densities, while developing hydrogen fuel-cell and electrofuel technology and infrastructure.

### Steps and Methodology:

- Organizational Mapping
- Literature Review
- Establishment of the Current Climatic Baseline
- Climate Change Modelling
- Consultation
- Risk Identification and Prioritisation - Results
- Identification and Prioritization of Adaptation Response - Results & Conclusions



The tool that is increasingly used in the analysis and assessment of climatic hazards is the development of a risk matrix. The Risk Matrix is used to present the assessment process and climatic risks at major airports. The risk assessment has identified **27 risks in the short and medium** to longer term based on the central and high climate scenarios. The impact according to AIA's Business Impact Assessment Model is as follows:

		IMPACT					
		Value	Human Health	Compliance	Image	Natural Environment	Local Communities
<b>High</b>	6	Critical risk to human life			Negative publicity severely damaging to AIA's public image	Irreversible damage to local flora, fauna (e.g. loss of life) & ecosystems	
	5			High legal. Imminent litigation or operational restrictions			Major unrest with demonstrations at the airport
	4	Significant health or safety hazard		Sustained negative publicity		Significant damage to local flora, fauna & ecosystems	
<b>Medium</b>	3	Moderate health or safety hazard	Moderate legal. Possible litigation		Significant impact		Moderate unrest with possibility of demonstrations at the airport
	2	Minor health or safety hazard	Minor legal. Not likely to lead to litigation	Moderate impact. Negative press		Limited damage to local flora, fauna & ecosystems	Minor unrest with no possibility of demonstrations at the airport
<b>Low</b>	1	None or negligible impact on health or safety	No legal or regulatory impact	No immediate impact outside AIA	No damage to local flora, fauna & ecosystems		No unrest
<b>Relative weight</b>		<b>25%</b>	<b>20%</b>	<b>20%</b>	<b>25%</b>	<b>10%</b>	

Likelihood	0.1	0.3	0.5	0.7	0.9
	Remote	Not likely (no experience exists)	Occasional (possible occurrence - at least one occurrence exists)	Likely (more than one occurrence)	Probable (incident is expected to occur)

Σ IMPACT	0.1	0.3	0.5	0.7	0.9
5-6					<b>Unacceptable</b>
4-5			<b>Review</b>		
3-4	<b>Acceptable</b>				
2-3					
1-2					
Likelihood	0.1	0.3	0.5	0.7	0.9

