



# Hockey's move towards Dry (non-irrigated) Hockey Turfs

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[www.fih.hockey/dryturf](http://www.fih.hockey/dryturf)



Since hockey first discovered synthetic turf surfaces in the 1970/80s it has preferred to play on wet surfaces?

But.....

- During tournaments, a field is typically watered 3 – 4 times per day
- Historically, the FIH mandated that a single watering application should apply 18,000 litres of water
- In 2017, FIH changed policy to say the turf manufacturer should determine how much water is required for their surface, with a minimum amount being 1/m<sup>2</sup>. Today most approved hockey turfs use this minimum amount – but this still equates to 6000 Litres per 10 minute cycle.
- Many turfs also hold the water more efficiently, so the frequency of watering is reduced
- During the Tokyo Olympics we used 39% less water than the Rio Olympics, which used 30% than London 2012. But this still resulted in hockey using approx. 1 million litres of water during the tournament



# Using wet fields creates environmental and economic challenges:

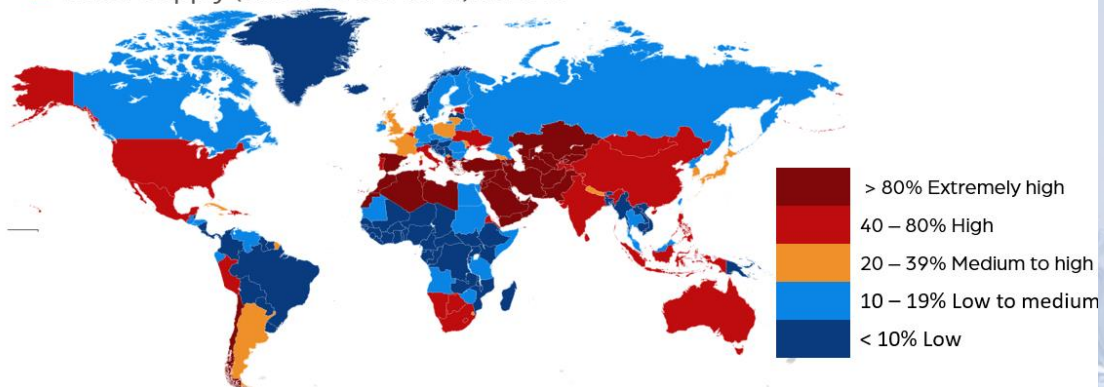


- Water is becoming an ever scarcer resource that needs to be used responsibly
- An irrigation system typically adds around €80,000 to the cost of a field
- Irrigation operating costs are increasingly expensive (power, water, drainage)
- Treating and pumping water creates a negative carbon footprint



## Where Water Stress Will Be Highest by 2040

Projected ratio of water withdrawals to water supply (water stress level) in 2040



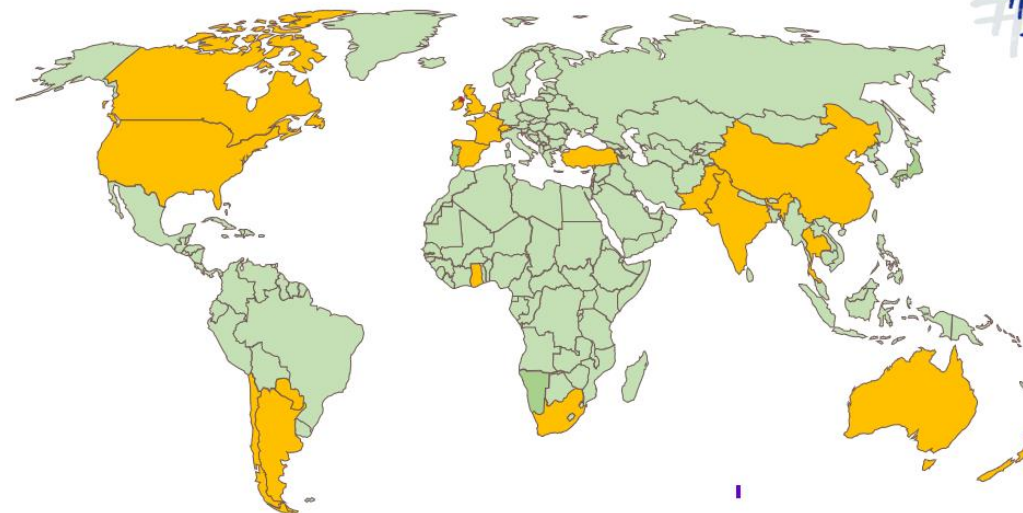
Source: World Resources Institute via The Economist Intelligence Unit

[www.fih.hockey](http://www.fih.hockey)

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## FIH Field certifications 2022



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So at our 2018 Congress the FIH announced that it wanted the synthetic turf industry to:

“Develop synthetic turf surfaces that have the playing characteristics of wet turf, but do not require irrigation to achieve them”



has a worldwide responsibility for defining what is required from the surfaces used by our sport.

Currently our standards require Global category surfaces to be used under wet conditions – so we needed to update them to remove this obligation, whilst ensuring performance and player welfare is maintained.



# Stage 1 – Determine why players prefer wet surfaces

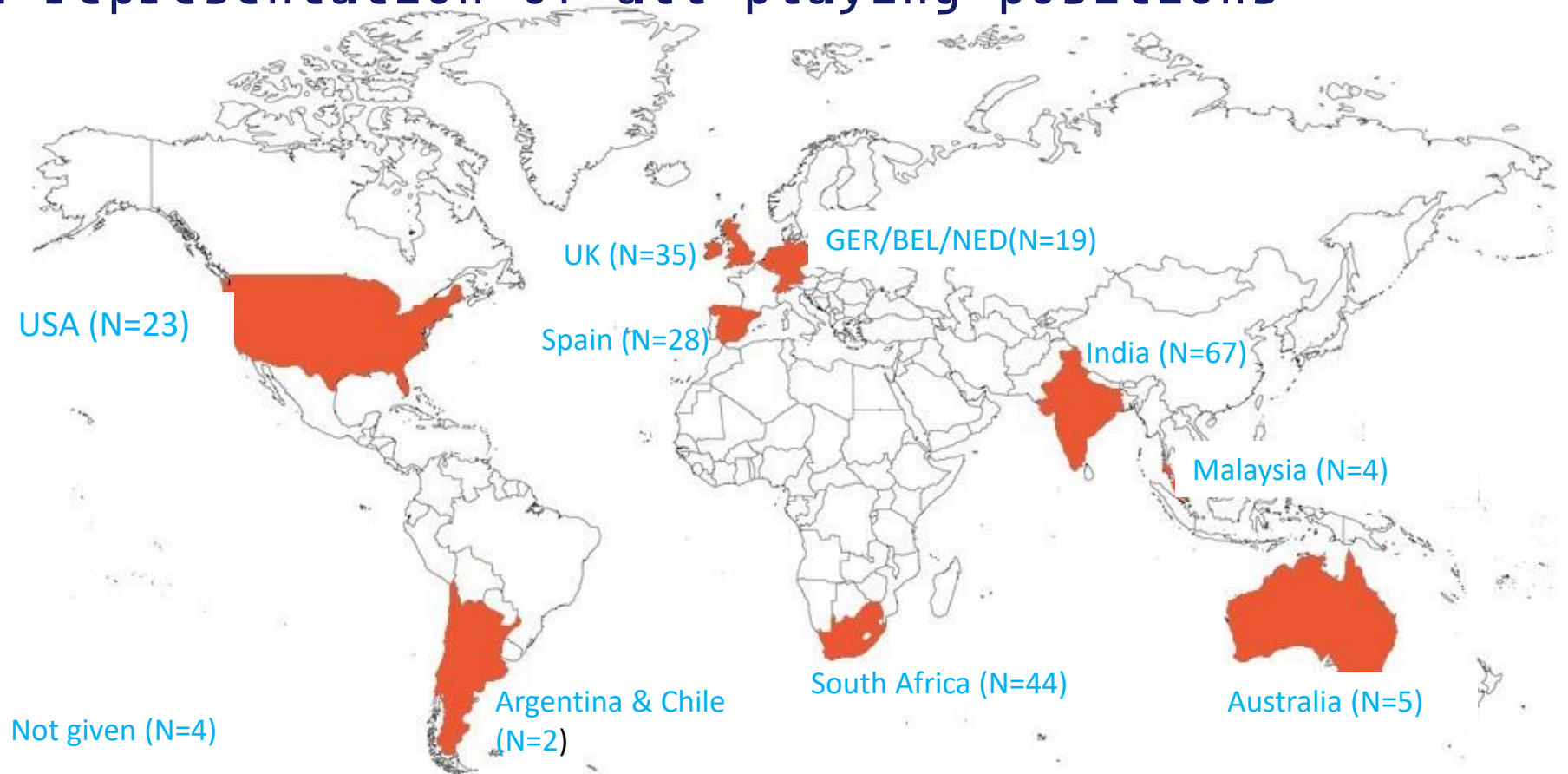


- Focus groups to develop questionnaire
- Global on-line survey

# Elite player questionnaires (232 responses)



- Good gender balance
- Good representation of all playing positions



# Ball / surface interactions

- Speed
- Consistency / trueness
- Bounce



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## Stick/ surface interactions

- Glid
- Smoothness
- Ability to initiate 3D skills





# Player / surface interactions

- Shoe / surface friction
- Comfort & cushioning
- Skin friction
- Heat retention



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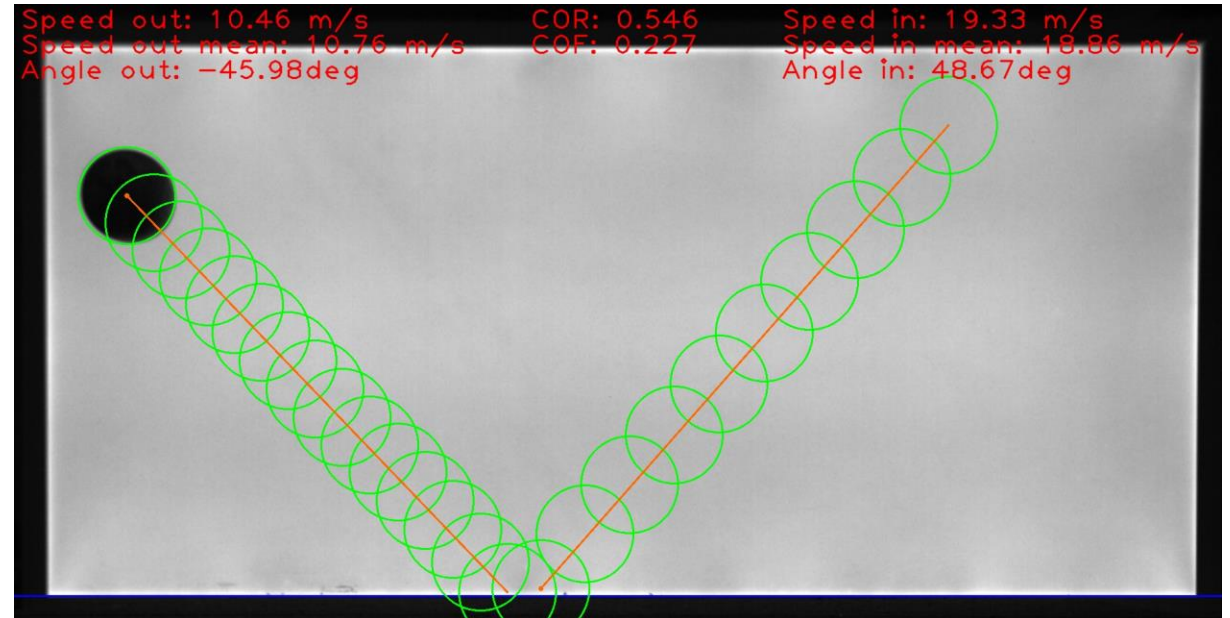


# Stage 2 – Gather objective measurements of ball, stick, and surface interactions



# Stage 3 – Develop new test methods and measure the key characteristics of water based hockey turfs

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# Stage 4 – Describe in an objective way how Dry Turfs should perform

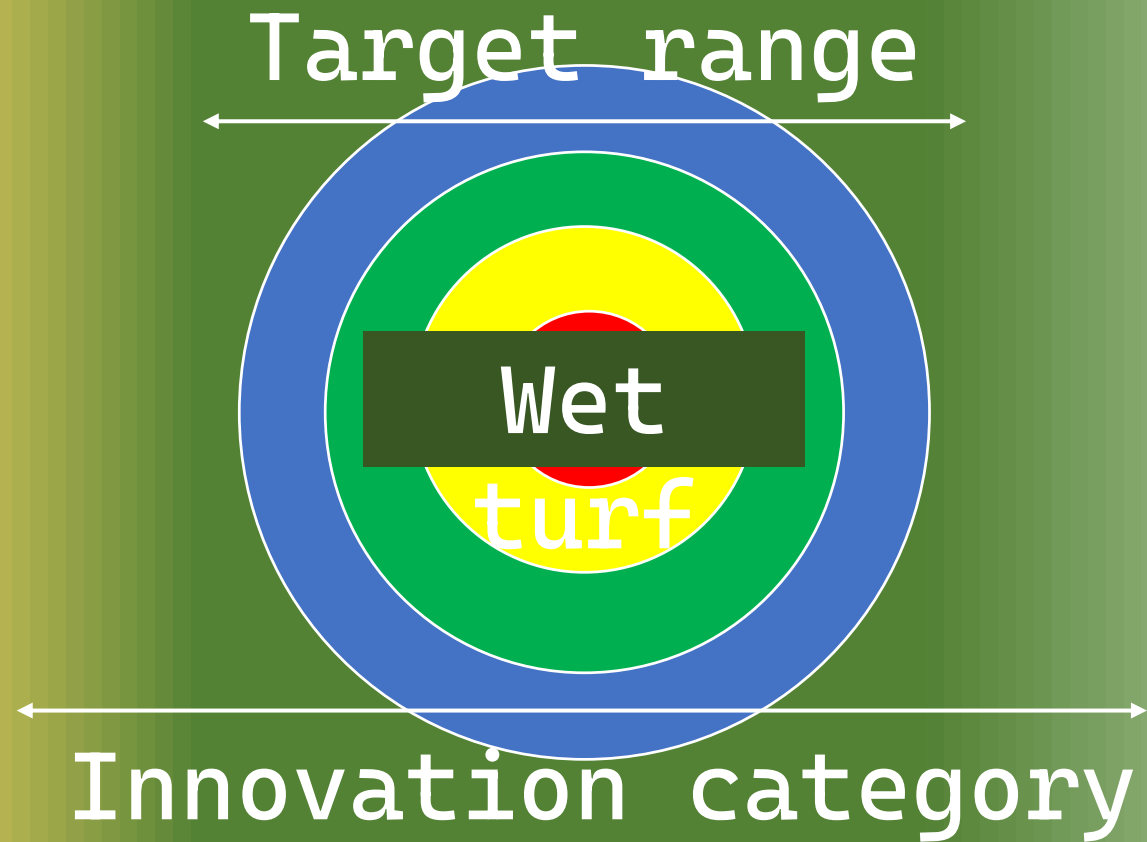


- Sports performance
- Player performance /  
comfort
- Durability
- Environmental  
compatibility





Sand  
dressed  
turf





Fields are built and surfaced with FIH Innovation Turfs



Working with Loughborough University we will collect player feedback to fine tune our standards





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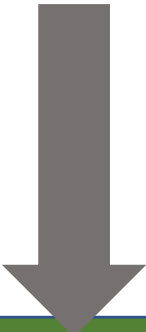
## Areas of specific interest:

- Potential for dry surfaces to cause carpet burns
- Foot grip (especially when surfaces are wet)
- Heat build-up
  - Foot grip
  - Player fatigue
  - Colour transfer to balls





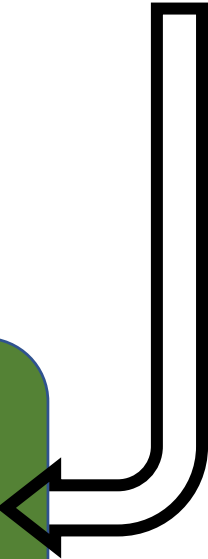
National  
category sand  
dressed turf



Category 3  
fields  
(national &  
community  
use)

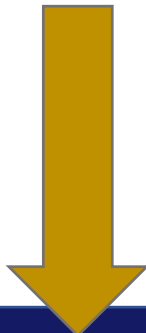
2023 /24

Innovation  
Category  
Turfs



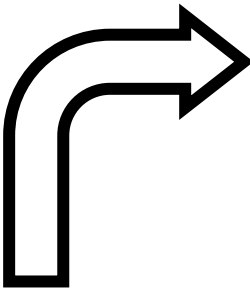
Global  
Category Dry  
Turfs

Global  
category  
wet turf



Category  
1 or 2 fields  
(premier  
league  
international  
use)

Q3 2024

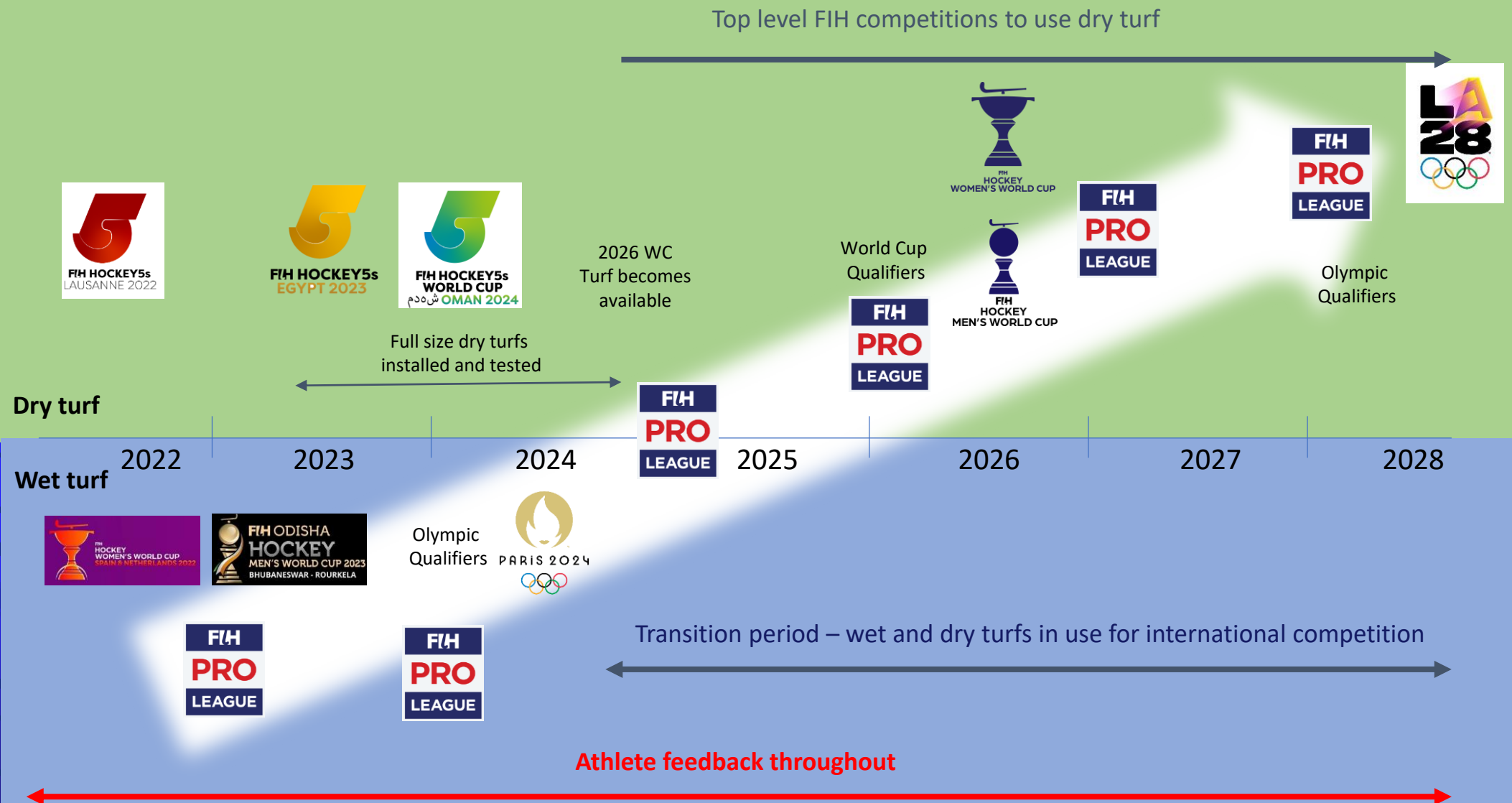


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# Timeline for FIH rollout of dry turfs



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# Frequently asked questions

- Will the FIH policy change if the performance of Dry Turfs is dissimilar to wet turfs?

FIH believes the long-term sustainability benefits justify the change, we also expect the performance of Dry Turfs to evolve as manufacturers innovate further

- Will the use of wet field be banned?

No, we envisage top-level hockey being played on Dry Turfs and wet fields for the foreseeable future

- Do Dry Turf fields need different base constructions?

No, we see no reason why current base constructions conforming to our *Hockey Turf and Field Standards* will not be suitable for these new types of surface

- Will Dry Turfs be as durable as wet turfs

We hope so, they should certainly last as long as a sand dressed turf

- Will Dry Turfs be cheaper than wet turfs?

Possibly not as the carpet specifications will be similar in many cases, but there is the obvious savings on irrigation, water and electricity





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# ANY OTHER QUESTIONS?

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