

"Condensation Removals" FAQs

Question number

Question

Answer

- 1 What's the required extraction rate are you looking for?

A 0.5l/hour dehumidifier has been shown to be effective. However, we were advised during the briefing call that under stress, breathing output is about 60-70ml/hr. It's difficult to quantify sweat output in these conditions, but we agreed that 0.25l/hr in total should be sufficient.
Please don't consider this an absolute minimum requirement to meet the challenge though. The low
- 2 The challenge mentions that desiccant type dehumidifiers are not in suitable because they do not remove moisture at a sufficient rate and also the systems require mains power. If we are developing a system that can remove moisture at a significantly greater rate than current systems, and does not require mains power, would this be in scope?

To clarify, the statements in in the challenge refer to current commercially-available dehumidifier solutions. There are active refrigerant and desiccant-based dehumidifiers available. These are fairly noisy and require mains power, though they are capable of extracting 0.5l/hr or more (possibly double the extraction rate we need). There are also purely-passive, desiccant dehumidifier solutions. These meet the power and noise requirements, but extract moisture at a much slower rate and do not work in our scenario, with a short-duration, high extraction requirement. We are interested in any solution that can meet the extraction rate, low-noise and low-power requirements.
- 3 How many people in the vehicle for how long?

Typically two to three people for a maximum about four hours.
- 4 Are there scenarios where a person with wet clothes goes into the vehicle?

That's quite a realistic scenario - people who have been out on foot then get into a vehicle. It certainly would add to the problem, but ignore for now to avoid complicating an already difficult challenge.
- 5 Do you change the car after four hours or would a new set of two to three people use the same vehicle to continue?

It would be a different car with different people.
- 6 Instead of reducing humidity, could the solution minimise the condensation on specified surface?

Presuming this would involve a coating to be applied to inner surfaces. The vehicle may be a hire car for example, so there might not be any previous access. Portability is key to start with.
- 7 Can you confirm what countries we're looking at using, is it this exclusively the UK?

It's primarily the UK for the purposes of this challenge, though there would be an added benefit to have worldwide utility.
- 8 What sort of vehicle and size is typically used?

There is no typical size, but mostly standard cars – small hatchbacks to larger saloons. Unlikely to be mini-buses or coaches.
- 9 Is it important for the person to be inconspicuous e.g. no face masks or face attachments allowable?

That would be acceptable, though the vehicle occupants may still have to use mobile phones etc.
- 10 Do we have a value to aim for being cost effective solution?

There is no target cost in mind. Getting the technology right at this stage is the key aim.
- 11 Have you got a feel for what sort of noise level is acceptable?

Generally inaudible from outside the vehicle and sufficiently quiet inside, that someone would be able to make a mobile phone call.
- 12 Can we propose a stage one offer but leave some details of stage two, such as partners as not yet decided, until we complete stage 1?

Collaborative efforts are welcome. You would need those to name all of the parties in the application due to the way that we work, so in your stage one offer you would need to say who you were going to work with. We can't add them into second stage without knowing who they are.
- 13 Does it matter if the device is visible from the outside of the vehicle?

Ideally nothing protruding from a window and no flashing lights. An inconspicuous, but visible device on the back seat or in a footwell would be acceptable.
- 14 Do you want a prototype built in phase one?

A lab-based concept demonstrator is acceptable (TRL 4).
- 15 How many devices do you want at the end of the project?

One demonstrator is sufficient for this first package of work.
- 16 Would you take an idea from workstream one and not award workstream 2 to the same bidder?

We would welcome collaborative bids, but would contract workstreams 1 & 2 as one package. The way the first award contract would be resolved is in intellectual property that you would own. If we wanted to go to a second phase, it doesn't prevent you or us asking other partners to come on board to help deliver it because we are ultimately looking for a scalable solution that we can take to market. We would not restrict it and you would have control of it.
- 17 To be clear workstream 1 & 2 are in total 60K and three months duration?

Yes, that is the nominally-allocated funding and timescale. If a provider thinks that's unrealistic or unachievable, they're welcome to propose a different sort of bid.
- 18 When will the project likely start?

We'd probably be looking to start early to mid-September.