# Transcription of Enterprising Australians video Sam Mitchell – Homemade Solar Bike

The video for this transcript can be found on the Questacon YouTube channel at: https://www.youtube.com/watch?v=ban9ZhrCr0I

## Transcription from video:

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|  | [Image appears of Josh and Sam in a bike shop in conversation] |
| Josh: | Hey folks, it’s Josh from Questacon and I’m here with Sam Mitchell, maker, tinkerer, solar enthusiast and bike rider. |
|  | [Image shows Sam riding his bike along The Canning Stock Route ] |
|  | Sam, you tackled one of Australia’s harshest tracks, The Canning Stock Route on a solar powered bike. How many K’s was that? |
|  | [Image changes back to Josh and Sam talking in the bike shop] |
| Sam: | About 1800 km of really interesting riding and maybe 5000 trip total. |
|  | [Image changes back to a montage of Sam’s trip throughout The Canning Stock Route (desert)] |
|  | The first 4000 was main dirt and main tar and for that 18000 or 19000 km of interesting. I think there was about 200 of like, 2 wheel driveable dirt roads. |
|  | [Image shows Sam riding his bike along a footpath in city environment] |
| Josh: | Sounds like a pretty tough time, and this is actually the bike that you did it on? |
|  | [Image changes back to Josh and Sam talking in the bike shop] |
| Sam: | I had this bike, it’s an electric fat bike |
|  | [Image changes to a photo of Sam’s bike and his trailer carrying solar panels followed by photos of a deconstructed trampoline frame] |
|  | And behind this I towed a trailer. The trailer and that frame is all homemade, out of an old trampoline frame. |
|  | [Image shows Sam riding his bike along road in the desert] |
|  | The first few prototypes were all three-wheeler trikes. The first one was like a kids’ petrol lawn mower powered go-cart. But instead of having a lawn mower motor and some go-cart wheels, |
|  | [Image changes to Sam working on his bike] |
|  | it had some kids’ bike tyres, some solar panels that I made out of old windscreens, |
|  | [Image briefly changes to a ‘selfie’ of Sam and his bike before changing to an image of the motor on his bike] |
|  | A cheap motor from China and some old lead acid batteries. |
|  | [Image changes back to Josh and Sam talking in the bike shop] |
|  | And then from there I was like ‘this is cool, it’s quite cheap… let’s make another one, a better one. And then kept doing that for a while. |
|  | [Image changes to Sam’s point of view while riding in the desert] |
|  | Until I was ready to make the one that ended up going around Australia. On this bike everything had to be stronger, it had to be really off-road capable. I was kind of more conscious about weight because weight then becomes a really, really big penalty, |
|  | [Image changes back to Josh and Sam chatting in bike shop] |
|  | that both you want to everything to be strong, but as you add more weight to the setup, there’s more force on everything and everything wants to break more. |
|  | [Image changes to Sam repairing his bike in on a dirt road] |
| Josh: | You mentioned on the road that you had to do some repairing. |
|  | Kind of, as you went because things would break. |
|  | What were some of the things that actually kind of gave up? |
| Sam: | The trailer frame cracked in a couple of places a couple of times. So I had this really dodgy bush welding setup. I effectively just had a length of fencing wire to act as a bit of a resistor. |
|  | [Image changes to Sam talking to camera in the bike shop] |
|  | I varied the length of that piece of wire to vary the power that I was getting at my little stick electrode and carried a piece of welding glass which is a square about this big |
|  | [Image changes to Sam’s point of view riding through the desert] |
|  | And that got me through several hundred km of corrugations sometimes to the next place. |
|  | [Image changes back to Josh and Sam talking in the bike shop] |
| Josh: | Did you ever want to give up, or turn back, or quit? |
|  | [Image changes back to Sam riding through the desert and Sam camping] |
| Sam: | Occasionally at the start I was ready for an excuse. Bail out isn’t always an easy option, like after a week in, the only way to get back out is to ride back. But after I kind of got used to what it was like being on the track, got used to it as a lifestyle, I definitely didn’t want to quit after that. |
| Josh: | What are you doing with yourself now? |
| Sam: | I’m studying engineering; renewable energy, which is this hybrid between mechanical and electrical and some solar panels. |
| Josh: | Why is solar so important to you? |
| Sam: | Climate change is big and scary and energy is really nice, |
|  | [Image changes back to Josh and Sam talking in the bike shop] |
|  | And if we’re going to keep having energy – and energy is really nice – we’re going to have to do something. |
|  | [Image changes to Sam filming himself after just completing The Canning Stock Route] |
|  | I appear to have just done the Canning Stock Route on a solar bike! (giggles) |
|  | [Music plays and the image changes to the Australian Government, Questacon and The Ian Potter Foundation logo and text appears: Questacon Smart Skills Initiative, Enterprising Australians, Developed by Questacon, #questacon, [www.questacon.edu.au](http://www.questacon.edu.au)] |