

## Terraforming Mars in one generation

Today I spent a few hours trying to terraform Mars in a single generation. You must follow all the rules of the [game](#), but you are allowed to control all random outcomes, including what corporation you play as, and what cards you draw.

The idea comes from [this forum post](#), but that post uses cards from the Venus, Prelude, and Colonies expansions. I wanted to use only the base game. However, it is probably impossible to terraform all of Mars in the base game, so I also permitted choosing 2 Prelude cards and using project cards from the Prelude expansion. Compared to the post, this seems easier because we do not have to terraform Venus, but it is surprisingly challenging because we cannot use any of the powerful cards from Venus or Colonies (or the Colonies corporation Point Luna, which makes it much easier to get project cards, one of the most restrictive resources in the game).

### Walkthrough

I played Corporate Era on the base map, with no starting cities or greeneries.

My corporation is Interplanetary Cinematics<sup>1</sup>, and I buy all ten base cards. (To follow along, take the first 10 cards of the list below, from Earth Office to Research. When drawing a card, take the next one down the list.) The prelude cards are Loan and Experimental Forest<sup>2</sup>. For Experimental Forest, I draw two plant cards, Mangrove and Plantation, and place a greenery on 19<sup>3</sup> (for a plant and a titanium), bringing the oxygen level to 1%.



Starting state for the map.

<sup>1</sup> This game involves playing many events to get instant resources and terraforming, so Interplanetary Cinematics' bonus of 2MC per event is very powerful. Its starting resources are also the highest (30 MC + 20 steel = 70 MC, and I use Advanced Alloys to increase the value of the steel even more).

<sup>2</sup> Because the bottlenecks of this game are raising the oxygen level and getting cards.

<sup>3</sup> The tiles are numbered starting from 1 for the top left tile, then left to right, like reading.



And now we begin! I start with 30MC (Loan pays for the base cards), 20 steel, 1 titanium, and 1 plant, with 12 cards in hand. First we play some cards that discount all future cards.

- **Earth Office** (-1MC). Saves 3MC for each earth tag.
- **Earth Catapult** (-20MC). Saves 2MC for every card.
- **Olympus Conference** (-3 steel). This is important for getting cards; it gives a card for every 2 science tags, which will end up being 6 cards over the course of the game.
- **Research Outpost** (-8 steel). Saves 1MC for every card. Place a city on 35, the rightmost square. We'll eventually place greeneries to its left, to get all the plant bonuses and MC bonuses from adjacency to oceans. We also take a card from Olympus Conference.
  - 9MC, 9 steel, 1 titanium, 3 plants, 9 cards in hand

We now have -3MC off of every card, but we don't have much money left. Fortunately, we can play Media Group, which combined with the corporation bonus, gives 5MC back for every event played. This means that playing cheap events becomes a good source of income.

- **Media Group** (free). Gives back 3MC for each played event.
- **Invention Contest** (free). Draw 1 card and get back 5MC.
- **Investment Loan** (free). Get 10MC, and 5MC because it is an event.
  - 29MC, 9 steel, 1 titanium, 3 plants, 7 cards in hand

Our next goal is to play Anti-gravity Technology, which requires 7 science tags, but discounts an additional 2MC from every card. We currently have only two (Invention Contest doesn't count because it is an event), but we will play 5 more science tags that also discount various future cards even further.

- **Advanced Alloys** (-6MC). Now steel and titanium are worth +1. Get a card from Olympus Conference.<sup>4</sup>
- **Indentured Workers** (free). -8MC off of the next card. Also get 5MC because it is an event.
- **Research** (free). This replenishes our hand with 2 cards + a card from Olympic Conference (because it has 2 science tags).
- **Mass Converter** (-5MC). This is our 6th science tag, and gives -2MC off of every space tag.
- **Quantum Extractor** (-10MC). Our 7th science tag and another -2MC off of space tags. Don't forget the card from Olympus Conference!
- **Anti-gravity Technology** (-11MC). Saves 2MC for every card.
  - 2MC, 9 steel, 1 titanium, 3 plants, 6 cards in hand

With -5MC off of every card, we now need to get three important cards out before we play our terraforming space events: Space Station, Optimal Aerobraking, and Arctic Algae. We'll also play AI Central to ensure we get all the space event cards in hand.

- **Business Contacts** (free). +5MC and +2 cards.
- **Martian Survey** (-4MC). Draw 2 cards. Get back 5MC and an additional card from Olympus Conference.<sup>5</sup>
- **Space Station** (-1MC). A final 2MC discount off of all space tags, bringing the final discount on space tags to 5MC (for all cards) + 6MC (for space tags) = 11MC!
  - 7MC, 9 steel, 1 titanium, 3 plants, 8 cards in hand
- **Optimal Aerobraking** (free). This gives 3MC and 3 heat for every played space event, and is very important because it is not only the primary source of heat, but also increases the amount of money we get back for each space event from 5MC to 8MC.
- **Arctic Algae** (-7MC). This gives 1 plant immediately, and 2 plants for every ocean, which is critical for being able to finish raising the oxygen.
- **AI Central** (-6 steel).
- **Use the AI Central action** to draw 2 cards.
  - 0MC, 3 steel, 1 titanium, 4 plants, 7 cards in hand

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<sup>4</sup> Advanced Alloys is only important for its science tag, as its effect only saves 9MC from Titanium, and there is an abundance of steel (which is why this can be played after Olympus Conference and Research Outpost). Perhaps another science card can be played here instead for an extra victory point.

<sup>5</sup> This is the only card not found in the base game. But this Prelude card is critical in the solution for allowing us to draw all the necessary cards, and I'm keeping the promise of not using cards from Venus or Colonies.

Now we are ready to play the space events! Each one is discounted by 11MC, and gives back 8MC + 3 heat.

- **Technology Demonstration** (free). Get 2 cards, an additional card from Olympus Conference, and 8MC + 3 heat. Note all cards in this section will get back 8MC + 3 heat; I will avoid saying this every time.
- **Imported GHG** (free). Get 3 additional heat (+ 3 heat provided by Optimal Aerobraking).
- **Asteroid** (-3MC). Increase the temperature and get 2 titanium.
- **Convoy from Europa** (-1 titanium). Place an ocean on 11 (getting 2 cards) and draw a card. Get 2 plants from Arctic Algae.
  - 29MC, 3 steel, 2 titanium, 6 plants, 15 heat, 9 cards in hand
  - -28°C, 1% O<sub>2</sub>, 1 ocean
- **Imported Hydrogen** (-2MC). (Note the extra 3MC discount from Earth Office.) Get 3 plants and place an ocean on 4 (getting a card + 2 plants).
- **Comet** (-2MC, -2 titanium). Raise the temperature and place an ocean on 61 (for 2 titanium + 2 plants).
- **Towing a Comet** (-4MC, -2 titanium). Get 2 plants, raise the oxygen, and place an ocean on 30, which is the leftmost ocean spot with a plant bonus (for 4 plants).
  - 45MC, 3 steel, 19 plants, 24 heat, 7 cards in hand
  - -26°C, 2% O<sub>2</sub>, 4 oceans
- **Ice Asteroid** (-12MC). Place 2 oceans on 31 and 32 (for 4MC + 8 plants).
- **Imported Nitrogen** (-9MC). Get 4 plants.<sup>6</sup>
- **Big Asteroid** (-16MC). Raise the temperature twice and get 4 titanium.
  - 36MC, 3 steel, 4 titanium, 31 plants, 33 heat, 4 cards in hand
  - -22°C, 2% O<sub>2</sub>, 6 oceans
- **Large Convoy** (-6MC, -4 titanium). Place an ocean on 41 (for 2MC + 3 plants), get 2 cards, and get 5 plants.
- **Giant Ice Asteroid** (-25MC). Raise the temperature twice and place 2 oceans on 42 and 43 (for 4 MC + 6 plants).
- **Deimos Down** (-20MC). Raise the temperature three times and get 4 steel.
  - 15MC, 7 steel, 45 plants, 42 heat, 3 cards in hand
  - -12°C, 2% O<sub>2</sub>, 9 oceans

We now have enough money to raise the heat up to 6°C. The last step will be achieved from the bonus at 8% O<sub>2</sub>.

- **Nuclear Zone** (-2MC). Raise the temperature twice and place the token on 53 (the left tile with the card bonus on the bottom).
- **Lava Flows** (-13MC). Raise the temperature twice and place the token on 27, Arsia Mons, for 2 plants. Get 5MC back for the event.

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<sup>6</sup> This card also gives 3 microbes, and there may be an alternative solution that involves putting these on Regolith Eaters for raising the oxygen an extra step.

- **Raise the temperature 5 times.**
  - 5MC, 7 steel, 47 plants, 2 heat, 2 cards in hand
  - +6°C, 2% O<sub>2</sub>, 9 oceans

Finally, we can finish raising the oxygen, by placing greeneries next to oceans for a final bit of income.

- **Place 7 greeneries** on 34, 33, 24, 23, 22, 21, and 12.<sup>7</sup> The first 6 greeneries will get the additional 9 plants to place the 7th greenery. This gives 22MC, the temperature bonus, and a card.
  - 27MC, 7 steel, 2 heat, 3 cards in hand
  - +8°C, 9% O<sub>2</sub>, 9 oceans
- **Mining Expedition** (-7MC). Raise the oxygen and get 2 steel. Get 5MC back.
  - 25MC, 9 steel, 2 heat, 2 cards in hand
  - +8°C, 10% O<sub>2</sub>, 9 oceans
- **Mangrove** (-7MC). Place a greenery on 5, getting 4 MC from adjacency to oceans.
  - 22MC, 9 steel, 2 heat, 1 card in hand
  - +8°C, 11% O<sub>2</sub>, 9 oceans
- **Plantation** (-10MC). Place a greenery on 54, next to Nuclear Zone, getting the final card.
  - 12MC, 9 steel, 2 heat, 1 card in hand
  - +8°C, 12% O<sub>2</sub>, 9 oceans
- **Strip Mine** (-7 steel). Increase the oxygen 2 times.
  - 12MC, 2 steel, 2 heat
  - +8°C, 14% O<sub>2</sub>, 9 oceans

We've terraformed Mars! Over the course of the generation, we played 38 cards, granting 42 TR from terraforming, 1 TR from Imported Nitrogen, and 10 victory points.

We end up with -3 MC production (-2 from the Loan prelude and -1 from Investment Loan), 2 steel and 1 titanium production (from Strip Mine), 7 energy production (Mass Converter and Quantum Extractor gives 10, and AI Central and Strip Mine loses 3), and 3 heat production (1 from Imported GHG and 2 from the temperature bonuses).

Can we do better than the initial TR + 53 victory points? Perhaps using different Prelude cards, a different corporation, or a completely different strategy/approach?

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<sup>7</sup> It's possible to place these greeneries in other locations to get more plants. However, there is no use for these extra plants, so I opted for a more aesthetically pleasing array of trees along the coastline here.

In fact, it's possible to end with more MC as well in several different ways, but at the cost of making the solution a bit less aesthetically pleasing. Although this is subjective, I like the modularity in that the space events are all played consecutively, as are the greeneries made with plants, and the temperature raised with heat.



The final board.