

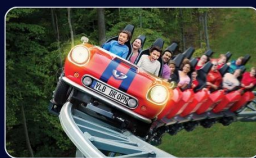
INNOVATION – Applied PATENT

Renewable Energy
Power Generation
(on Tirumala Hills)

(1) Lighting 8400 Homes
(2) Revenue - ₹ 1.5 Cr. per
month through 'Carbon
Credits'



Driverless Car
New Concept

Contact - 9866481059

 Renewable Energy – Power Generation Using Human Weight – per day - 1,00,000 nos visiting Pilgrims “up & down” movement to Tirumala Hills, for Lord Balaji Darshan	
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Question -1:- How much Power can be generated?

Approximately **2.1 GWh** (gigawatt-hours) of power could be generated per day, assuming 50,000 people ride the rollercoaster-like system daily, with 10 people per trolley, and 50% efficiency

Question - 2:- What will be 'Carbon Credits' Revenue?

- Annual revenue: 620,500 carbon credits × ₹200 = ₹124,100,000 (approximately \$1.7 million USD)

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Request to Agama Shastra Experts :-

https://docs.google.com/document/d/11JwtbL4BgUoVjInEJOOb7Mkh-Tqr_XMdo/edit?usp=sharing&ouid=115971426624599319604&rtpof=true&sd=true

At ' Srivari Mettu' – Steps Way - Slant distance of 2 km. on Hill slope, weight @ 50 kg per person - 10 people in a trolley are rolled down in Rollercoaster.	   
	APSRTC Buses are consuming Rs.16, 00,000/- Diesel per Day, to shift Pilgrims 1, 00,000 nos up & down Tirumala Hills. Consumption by other vehicles, extra
	This is creating heavy Pollution on Tirumala Hills, In the aerial distance say 3 K.M. radius
	Customized Roller Coaster Technology, Track & Trolley (2 KM slant distance) can be used to shift men & material up and down Hills.

	It can be erected on the SriVari Mettu Steps Way, without disturbing the existing Concrete Slabs, by erecting Tracks on them, using H- beams and Pillars.
	1) Solar Panels can be erected above Tracks, so that we can get Solar Energy, in addition to the shelter to the traveling men / materials. 2) As it is through PIPE Travel, and using only above the Foot Path Way “Agama Shastra” Experts may not be having Objections.
	<u>Driving & Control Unit</u> -- To Control the “Trolley Speed”, to maintain 20KMPH, for the safety of the Passengers, against the Gravitational Force, while Loads are coming Down Hills, using Speed Controllers, FlyWheel technology, Spring Technology, etc Mechanical Bty (with saved Energy) --To Move Load (Passenger filled Trolleys) up Hills.



https://chatgpt.com/s/m_69ba7b04133c8191bb795e790eb57866

Geo Tagging :- Deliverable Story

Power Generation

Question:-

Slant distance of 2 km. on Hill slope, weight @ 50 kg per person -
10 people in a trolley are rolled down in a Roller Coaster.

How much Power can be generated?

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Answer by Meta ai:-

That's an innovative idea! Let's calculate the potential power generation:

Assumptions:

- Slant distance (d) = 2 km = 2000 m (on the hill slope)
- Weight (w) = 50 kg/person $\times$ 10 people = 500 kg (total weight in the trolley)
- Acceleration (a) = 9.8 m/s² (due to gravity)
- Efficiency (η) = 0.5 (assuming 50% efficiency in energy conversion)

Kinetic energy (KE) calculation:

1. Potential energy (PE) at the top of the hill:

$$PE = m \times g \times h \text{ (where } h \text{ is the height of the hill)}$$

Since we have the slant distance, we can estimate the height (h) using the Pythagorean Theorem:

$$h = \sqrt{(d^2 - (d/2)^2)} \approx 1414 \text{ m (approximate height of the hill)}$$

$$PE \approx 500 \text{ kg} \times 9.8 \text{ m/s}^2 \times 1414 \text{ m} \approx 6,933,400 \text{ J (or 6.93 MJ)}$$

2. Kinetic energy (KE) at the bottom of the hill:

$$KE = PE \times \eta \text{ (assuming all potential energy is converted to kinetic energy)}$$

$$KE \approx 6,933,400 \text{ J} \times 0.5 \approx 3,466,700 \text{ J (or 3.47 MJ)}$$

Power calculation:

- Time (t) taken to travel the distance:

$$t \approx \text{distance} / \text{speed (assuming a constant speed)}$$

Let's assume a moderate speed of 36 km/h (10 m/s) for the trolley:

$$t \approx 2000 \text{ m} / 10 \text{ m/s} \approx 200 \text{ s}$$

- Power (P):-

$$P = KE / t \approx 3,466,700 \text{ J} / 200 \text{ s} \approx 17,333 \text{ W (or 17.33 kW)}$$

So, approximately 17.33 kW of power could be generated by rolling the trolley with 10 people (500 kg) down a 2 km hill slope, assuming 50% efficiency. Keep in mind this is a rough estimate, and actual values may vary depending on various factors like friction, trolley design, and energy conversion efficiency.

Per day (24 hours), 50000 people are rolling down.
How much power can be generated?

Let's calculate the total power generation per day:

- Power generated per trip (P) = 17.33 kW (as calculated earlier)
- Number of trips per day (n) = 50,000 people / 10 people per trolley = 5,000 trips
- Total power generated per day (P_total) = $P \times n \times 24 \text{ hours}$
 $= 17.33 \text{ kW} \times 5,000 \times 24$
 $\approx 2,099,400 \text{ kWh (or 2.1 GWh)}$

So, approximately 2.1 GWh (gigawatt-hours) of power could be generated per day, assuming 50,000 people ride the rollercoaster-like system daily, with 10 people per trolley, and 50% efficiency.

To put this into perspective:

- **2.1 GWh is equivalent to:**
 - **Powering approximately 8,400 average Indian homes for a day** (assuming 250 kWh / day / household)
 - Saving around 1,700 tons of CO2 emissions (based on India's grid emission intensity)

This is a significant amount of power generation, and with proper infrastructure and maintenance, this innovative system could contribute to a sustainable and renewable energy mix!

So, how much Carbon Credits - We can expect with this Project?

Let's estimate the carbon credits potential:

Assumptions:

- 2.1 GWh of electricity generated per day (as calculated earlier)

- CO2 emission reduction: 1,700 tons per day (based on India's grid emission intensity)
- Carbon credits: 1 ton CO2 equivalent = 1 carbon credit (CDM/UNFCCC standards)

Daily carbon credits:

- 1,700 tons CO2 reduction × 1 carbon credit/ton = 1,700 carbon credits per day

Annual carbon credits:

- 1,700 carbon credits/day × 365 days/year = 620,500 carbon credits per year

Potential revenue from carbon credits:

- Assuming a conservative carbon credit price of ₹200 (approximately \$2.7 USD)

- Annual revenue: 620,500 carbon credits × ₹200 = ₹124,100,000 (approximately \$1.7 million USD)

This project could generate a significant number of carbon credits, leading to a substantial revenue stream. Keep in mind that carbon credit prices fluctuate, and actual revenue may vary. Nevertheless, this innovative project's carbon credits potential is substantial!

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'Net' Energy Calculation:-

Let us assume that -

10 Units of Power- we can generate by bringing **down** people *from the top of Hill*.

11 Units Power required for taking **up** people *to the top of Hill*.

In case of Tirumala Hills - for Lord Balaji Darshan Pilgrims movement -

Daily (24 Hours) 50,000 nos Pilgrims are going up Hills in Buses / Vehicles by Road

(+) 20,000 nos Pilgrims going up Hills by walking through Foot Path Way.

All the 70,000 Pilgrims come down Hills using Vehicles / Buses only.

Hence, there is **more** weight (@50 Kg each person) on Hills to come down - and **less** weight to go up Hills.

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Screenplay :-

https://docs.google.com/document/d/168VAzKQ_OpfQkCb6lqsjwRiHYjV9ZM/edit?usp=sharing&ouid=115971426624599319604&rtpof=true&sd=true

Sample Model :- <https://youtube.com/shorts/bD-1v10cmK4?si=hLDIMsQ50XsbrkUj>



India's FIRST Funicular Trolley | ಕನ್ನಡ | தமிழ் | हिन्दी | English



Sample Model:- <https://youtu.be/vQrmNGJ3jk4>



Foldable Chair :-

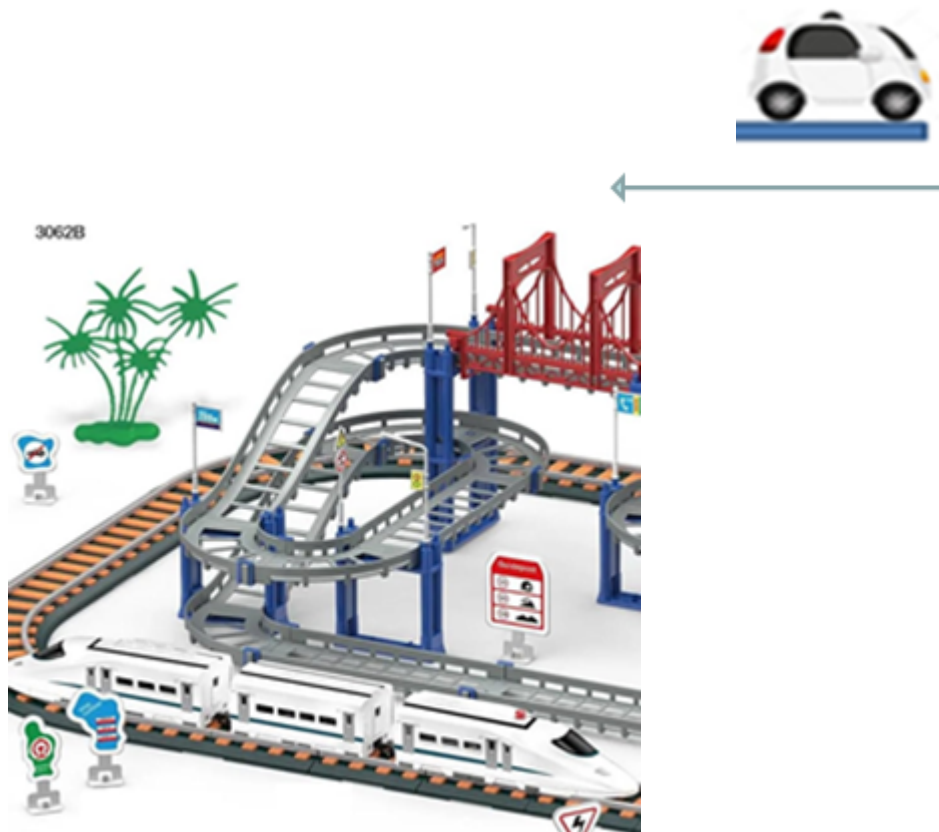
<https://youtube.com/shorts/Mh5z7wQASTo?si=Ee7AAm0nza2vKBIM>

Erecting Tracks above footpath sunshades

Sample :-

<https://youtube.com/shorts/GvBFOaDcJMc?si=DiGPEGYARDpj6FSd>

Sample Calculations Power Generated on **Pro to type Model**.



Car – Shaped Trolleys) will be loaded on Tracks.
 For sample **RIDES** (on Pro to Type Model) -
 for 500 meters tracks which can be erected in
 round-shape, in the - site (say) 75 x 150 ft. Area
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(Q) Power Generation Calculations – How much Power can be generated When 2 – Passenger filled trolley with 100 Kg weight rolling down on Rollercoaster Tracks at 45 degrees from 15 ft height

(Ans)

A 100 kg trolley with two passengers, rolling down a 45-degree, 15-foot high roller coaster track, can theoretically generate 3284.93 Watts (3.28 kW) of average mechanical power. This is calculated from a potential

energy of 4485.13 Joules, with the trolley accelerating at 6.94 m/s^2 over 6.47 meters in 1.37 seconds. This figure is a theoretical maximum, as real-world factors like friction and air resistance would reduce actual power output.

The generated Power - could power a **single 10W LED bulb** - for approximately **7 minutes and 28 seconds**.

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Python

Step 1: Convert height from feet to meters

height_feet = 15

height_meters = height_feet * 0.3048

print(f"Height in meters: {height_meters:.2f} m")

Given values

mass = 100 # kg (total mass of trolley + passengers)

angle_degrees = 45

gravity = 9.81 # m/s^2

Step 2: Calculate potential energy (PE)

$PE = mgh$

potential_energy = mass * gravity * height_meters

print(f"Potential energy: {potential_energy:.2f} Joules")

Step 3: Calculate acceleration down the incline for a "trolley"
(assuming dominant translational motion)

For an object sliding or rolling with negligible rotational inertia,
 $a = g * \sin(\theta)$

```
import math
```

```
angle_radians = math.radians(angle_degrees)
```

```
acceleration = gravity * math.sin(angle_radians)
```

```
print(f"Acceleration along the slope: {acceleration:.2f} m/s^2")
```

Step 4: Calculate distance along the incline (d)

$d = h / \sin(\theta)$

```
distance_along_slope = height_meters /  
math.sin(angle_radians)
```

```
print(f"Distance along the slope: {distance_along_slope:.2f} m")
```

Step 5: Calculate time taken (t)

Using $d = 0.5 * a * t^2$ (assuming starting from rest)

$t = \sqrt{(2 * d) / a}$

```
time_taken = math.sqrt((2 * distance_along_slope) /  
acceleration)
```

```
print(f"Time taken to roll down: {time_taken:.2f} seconds")
```

Step 6: Calculate average power

Power = PE / t

average_power = potential_energy / time_taken

print(f"Average Power: {average_power:.2f} Watts")

Code output

Height in meters: 4.57 m

Potential energy: 4485.13 Joules

Acceleration along the slope: 6.94 m/s²

Distance along the slope: 6.47 m

Time taken to roll down: 1.37 seconds

Average Power: 3284.93 Watts

Considering a 2-passenger filled trolley with a total mass of 100 kg rolling down roller coaster tracks at a 45-degree slope from a height of 15 feet, the average mechanical power that can be generated is approximately 3284.93 Watts, or about 3.28 kilowatts.

Here's the breakdown of the calculation:

- Height: 15 feet is equivalent to 4.57 meters.
- Potential Energy: The gravitational potential energy of the 100 kg trolley at this height is approximately 4485.13 Joules.
- Acceleration: For a trolley on tracks, it's assumed that the dominant motion is translational, and the rotational inertia of the wheels is negligible compared to the overall mass. Therefore,

the acceleration down the 45-degree slope is approximately 6.94 meters per second squared.

- Distance Along Slope: To achieve a vertical drop of 4.57 meters at a 45-degree angle, the trolley travels approximately 6.47 meters along the slope.

- Time Taken: Based on this acceleration and distance, it would take approximately 1.37 seconds for the trolley to roll down.

- Average Power: By dividing the potential energy by the time taken, we find the average power to be approximately 3284.93 Watts.

This calculation represents the theoretical maximum mechanical power available, assuming no friction or air resistance. In a real-world scenario, factors like track friction, air resistance, and the efficiency of any power generation mechanism would reduce the actual power output.

Future Tirumala :-

<https://drive.google.com/file/d/1CQXkeqyM3j0FS0AFijnATAm9IJNIHGpS/view?usp=sharing>

చిత్రగుప్తుడు & కర్మ రికార్డింగ్ రహస్యం మీ కర్మ ఎలా రికార్డ్ అవుతుంది?

<https://drive.google.com/file/d/1skNBVKVAK-IgMFrdqXn8QP4utvx1z8R/view?usp=sharing>

https://www.linkedin.com/posts/stem-education-life_in-remote-coastal-regions-of-colombia-a-n-activity-7426308683992707072-Clmv?utm_source=share&utm_medium=member_desktop&rcm=ACoAAAi7PIcB2MbE32kQxLAddIJIU3A_nFhdryY