
NATIONAL HIGHWAYS FOR ELECTRIC VEHICLES
NHEV — RSA
National Highways for Electric Vehicles
Intelligent Roadside Assistance Network
From Connected Highways to Intelligent Roadside Assistance

A HIGHWAY NETWORK WHERE EVERY STATION TALKS TO THE NEXT



Glowing communication / data links carry live status between every station on the corridor.

DATA SHARED ACROSS THE NETWORK

- Station status
- RSA availability
- RSA location
- Vehicle traffic information
- Charging availability
- Incident information
- Estimated response time
- Nearby vehicle distress alerts

HOW DOES NHEV KNOW A VEHICLE NEEDS HELP?

Real-Time Vehicle Intelligence



EV TELEMETRY HUD
(Heads-Up Display)

Soc
62%

Speed
84 km/h

NE bound

GPS 19.07°N, 72.87°E

Live link to NHEV network

- GPS location
- Direction of travel
- Speed
- Battery State of Charge (SoC)

VEHICLE DIAGNOSTIC SIGNALS

- Battery health / status
- Vehicle diagnostics
- Charging status
- Breakdown / fault alerts

Together these signals give NHEV a continuous, real-time read on every connected vehicle's condition

VEHICLE → CONNECTIVITY LAYER → NHEV NETWORK

VEHICLE

Generates operational data



CONNECTIVITY

Telematics transmits data



NHEV PLATFORM

Receives & processes info



STATION NETWORK

Stations receive what's needed





EVERY ~50 KM: A CONNECTED SAFETY & ENERGY NODE

FIVE STATIONS , ~ 50 KM APART

- EV CHARGING
- RSA VEHICLE
- CONNECTIVITY
- LOCAL MONITORING
- SUPPORT TEAM
- STATION DATA




~50 km


~50 km


~50 km


~50 km


~50 km



Each node is a connected safety-and-energy point:
charging, RSA standby, monitoring and support in one place.

WHAT HAPPENS WHEN AN EV IS IN TROUBLE?

- VEHICLE LOCATION
- BATTERY CONDITION
- REMAINING RANGE
- DIRECTION OF TRAVEL
- NEAREST STATION
- RSA AVAILABILITY
- RSA VEHICLE LOCATION
- ESTIMATED RESPONSE TIME



LOW RANGE RISK ALERT

Battery	9%
Estimated range	35 Km
Next station	42 km away



EV on Highway



Connected Control Platform



Nearest Charging Station



RSA Support Vehicle

VEHICLE PASSES THE STATION WITHOUT CHARGING



Vehicle continues after passing a station



System continues tracking the vehicle



Platform identifies high risk of vehicle stranding



Assistance workflow can start before or after stranding



BATTERY DECLINE AFTER MISS ED STOP



Battery level may decline 12% → 9% → 6% → 4% as the vehicle continues past the station, with live location updating throughout.

PREDICTIVE STRANDING RISK

THE NEAREST RSA IS NOT ALWAYS THE BEST RSA

RSA A — 6 km away



— Nearest — busy

RSA B — 11 km away



Available — best fit

SELECTED

RSA C — 9 km away



Available — poor road access

SELECTION FACTORS

- Distance
- Road connectivity
- Direction of travel
- RSA availability
- Current assignment
- Estimated arrival time
- Traffic / road conditions
- Assistance capability

ONE NETWORK MULTIPLE INTELLIGENT STATION



NHEV DATA/COMMAND LAYER

STATION A





STATION B



STATION C



LIVE RSA STATUS UPDATES

- RSA Available



- RSA Busy



- RSA Enroute



- RSA at Incident



- RSA Returning



- RSA Out of Services



HOW DOES THE SYSTEM DECIDE WHICH RSA TO SEND?

- Incident received
- Check RSA capability
- Check whether an RSA is available
- Check route accessibility
- Search neighbouring stations if required
- Check current RSA assignments
- Evaluate estimated response time
- Dispatch selected RSA



FROM ALERT TO ASSISTANCE



1

00:00



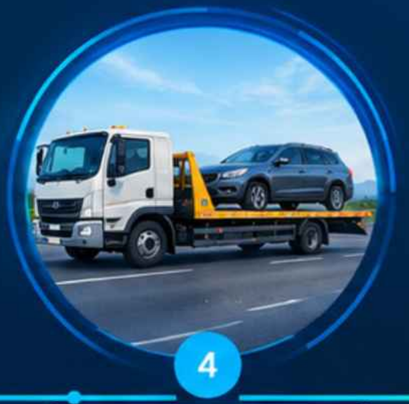
2

00:01–05:00



3

05:00–08:00



4

08:00–10:00



5

10:00–30:00

ASSISTANCE PROVIDED

TARGET RESPONSE MODEL

WHEN CAN RSA BE REQUESTED?

Critical battery / insufficient range



Battery failure



Vehicle breakdown



Technical / electrical failure



Tyre or wheel problem



Accident / collision



Overheating or critical warning



Driver-initiated assistance request



RSA IS MORE THAN JUST A TOW TRUCK

Emergency EV support



Mobile charging / energy support



Minor repairs



Tyre assistance



Basic diagnostics



Vehicle recovery / towing



Safe relocation



Emergency coordination

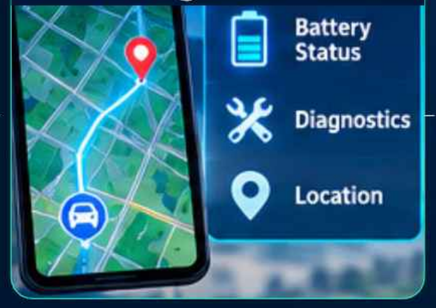


VEHICLE → DATA → NHEV → STATION → RSA → VEHICLE

EV



GPS / Battery / Diagnostics



Connectivity Layer



NHEV Data Platform



Incident Detection



Station / RSA ID



RSA Dispatch



Live RSA Tracking



Vehicle Assistance



Incident Closed



A REAL-TIME VIEW OF THE NHEV-RSA NETWORK



1,284 Vehicles Monitored

110 Stations Online

6 Incidents Active

37 RSA Units Available

LIVE VEHICLES



- Normal
- Low Battery
- Assistance Risk
- Breakdown

Live map view: vehicle markers colour-coded by risk state, updating in real time across the corridor.

LIVE STATIONS & RSA

Online | RSA Available | RSA Busy | Offline



RSA fleet states — Available / En Route / At Incident / Returning — tracked live for every station node.

EV BATTERY CRITICAL BETWEEN TWO STATIONS



VEHICLE BREAKS DOWN

EV breakdown



Automatic or manual alert



GPS location



NHEV system receives incident



RSA availability checked



RSA dispatched



RSA tracked



Assistance completed



THE INTELLIGENT BEHIND RSA

- Vehicle location
- RSA capability
- Vehicle condition
- Road accessibility
- Direction of travel
- Estimated response time
- RSA availability
- Current RSA assignments

OPTIMAL RSA DISPATCH



Eight live inputs converge into one decision engine that selects the most suitable RSA — not simply the closest.

THE NHEV NETWORK AS A DIGITAL NERVOUS SYSTEM

- Vehicles
- Stations
- NHEV Platform
- RSA Fleet
- Highways

NHEV
National Highways for Electric Vehicles

- Sensors
- Network Nodes
- Brain / Decision Layer
- Response System
- Connected Network



FROM CHARGING INFRASTRUCTURE TO INTELLIGENT HIGHWAY ASSISTANCE

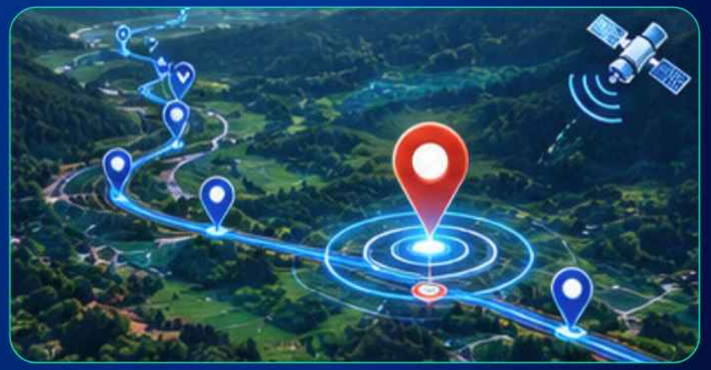
DETECT EARLY



UNDERSTAND IN REAL TIME



LOCATE PRECISELY



SELECT THE RIGHT RSA



DISPATCH QUICKLY



KEEP EVS MOVING

