Klimaatplan 2025-2035

https://www.internetconsultatie.nl/klimaatplan2024/b1

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De verandering naar een duurzame samenleving en economie is in Nederland al volop gaande.
De afgelopen jaren zijn grote stappen gezet om het 2030-doel uit de Klimaatwet te bereiken. Die stappen worden ook steeds beter zichtbaar om ons heen. Huizen worden steeds beter geïsoleerd en gaan via warmtenetten en warmtepompen van het aardgas af. **Meer auto's zijn elektrisch en elektriciteit wordt steeds meer op duurzame wijze met windmolens en zonnepanelen opgewekt.** De industrie produceert aanzienlijk duurzamer door investeringen in elektrificatie, groene waterstof, warmtepompen en circulaire productieprocessen. Het energiesysteem verandert van een systeem gebaseerd op centrale voorzieningen die draaien op fossiele energie naar een systeem gebaseerd op maximale inzet op energiebesparing en de inzet van nieuwe, groene bronnen.

> Mijn commentaar gegeven op vrijdag 7 februari 2025:
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> De productie van een elektrische auto is niet per se groener dan een brandstofauto. Vooral de productie van een batterij voor de elektrische auto kan best wel vervuilend zijn. Ook hebben batterijen niet het eeuwige leven. Daarbij komt dat de capaciteit met 2,3% punt per jaar achteruit gaat. Batterijen zijn moeilijk te realiseren. Bij verbranding komen gevaarlijke gassen vrij. Gassen zoals koolstofmonoxide en HF (hydrogenfluoride oftewel waterstoffluoride). Beschadigde batterijen kunnen spontaan in brand vliegen. Wat bekend staat als thermal runaway. In Engeland willen instanties dat de regering daar het publiek waarschuwt voor de gevaren van elektrische auto's. De stoffen die vrijkomen bij de verbranding kunnen de lucht, water en bodem ernstig vervuilen.
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> Verder zou ik er op willen wijzen dat er een wezenlijk verschil bestaat tussen primaire energiebronnen als de zon, wind, aardwarmte, kolen,

uranium, kolen, turf, hout, olie en secundaire energiebronnen als elektriciteit. Voor de opwekking van elektriciteit is altijd een andere energiebron nodig.
Wat betreft de energiedichtheid van fossiele brandstof bestaat er een zekere relatie tussen de hoeveelheid opgeslagen koolstof van een bepaald volume van een bepaalde brandstof en de mate van energie die de desbetreffende brandstof kan leveren. Hoe meer koolstof opgeslagen per volume brandstof, hoe meer energie er kan vrijkomen. Daarbij komt dat elke vorm van energie in wezen zonne-energie is. Steenkool is een vorm van opgeslagen zonne-energie.
Bij de omzetting van primaire energie naar elektriciteit gaat energie 'verloren'. Tussen de 40 en 66 procent (zo'n ⅔ deel).

Daarnaast wil ik aandacht voor het feit dat windmolens en zonnepanelen maar een (zeer) beperkte levensduur hebben. Ook is het erg kostbaar om ze allemaal te onderhouden, te repareren bij beschadigingen en onderdelen ervan te vervangen. Bij de productie van materiolen voor windmolens en zonne-panelen is ook niet (altijd) milieuvriendelijk te noemen.

Beter zou zijn om alle voor- en nadelen van bepaalde besluiten betreffende klimaatplannen naast elkaar neer te leggen en een op basis van afwegingskader bepaalde besluiten te nemen. Het liefst dusdanig dat er nog tijdig bijgestuurd kan worden. Niet alles inzetten op een paard. Dus geen one size fits all oplossing.

Als allerlaatste zou ik het willen hebben over de inrichting van de samenleving en in het bijzonder de economie en de rol van mobiliteit erin. De energie die niet wordt gebruikt is het milieuvriendelijkst. Hoe meer spullen oftewel hoe meer materiaalgebruik en hoe meer energieverbruik. Langer doen met de spullen en minder weggooien zorgt voor een lagere CO2-uitstoot. We leven in Nederland in een land met materiële overvloed, maar we werken met zijn allen uit de naad net alsof we nog in de wederopbouwfase zitten. Een fase waar een niets was en er schaarste heerste. We zitten in een economische situatie waarbij de spullen en de menskracht er zijn, maar het geld op een of andere manier er niet is of in zeer onvoldoende mate.

Hieronder: Achtergrondinformatie recent van januari en februari 2025 van het internet geplukt:

Flame retardants in some batteries might be making fires worse

'It's a futile effort against an overwhelming force.'
By Mack DeGeurin
Posted on Jan 29, 2025

https://www.popsci.com/technology/batteries-fire/

As wildfires devastated communities in southern California over the past three weeks, an unknown number of highly combustible lithium-ion batteries found in everything from Apple AirPods to Tesla Cybertrucks were engulfed in flames and released dangerous chemical pollutants into the air. Many batteries, particularly in E-Bikes and other products with plastic recharge battery enclosures, have flame retardants added to their outer coatings in an effort to limit their flammability. But researchers writing this week in the journal *Environmental Science & Technology* say those flame retardants don't seem to be doing much to quell a fire's spread and may actually be releasing *more* health-endangering toxins into the air.

"Historically, flame retardant use to meet flammability standards has resulted in documented health risks without demonstrated fire-safety benefits for products such as children's products, furniture, and electronics," scientists from the Green Science Policy Institute wrote in the article.

"We question requirements that lead to the addition of flame retardants in plastic battery enclosures," they added.

Why lithium-ion battery fires are so dangerous

Batteries present unique challenges due to the strength and duration at which they burn. When damaged or exposed to high temperatures, like during a fire, a chain reaction called "thermal runaway" occurs causing the battery to heat up uncontrollably until it finally combusts. These fires are notoriously difficult to quell because they burn at extremely high temperatures and have the ability to reignite. That's especially true in large electric vehicle batteries which contain far more stored energy than ones found in smaller consumer electronic devices. A single Tesla Model S electric vehicle, for context, reportedly has as much lithium to make as roughly ten thousand iPhones. Battery fires are also dangerously unpredictable. Damage caused to a battery might not lead to a fireball for days or even months later. That means clean-up crews tasked with removing these batteries from areas following fires have to assume they are dealing with invisible, ticking time bombs.

[Related: Electric vehicle fires are rare, but challenging to extinguish]

In response to those threats, some lithium-ion battery manufacturers have begun using a plastic coating that includes fire retardants in order to meet state flammability standards. Green Science Policy Institute Senior Scientist Lydia Jahl says this practice might be doing more harm than good. As of now, Jahl and her colleagues say there is a lack of clear research proving these chemicals actually do much of anything to slow down battery fires. Jahl says it is unclear what percentage of lithium-ion batteries on the market today are using these chemicals, but they tested several E-bike brands which showed multiple markers of flame retardants in their plastic enclosures.

The concern, she noted, is that companies trying to abide by state flame ratings and safety standards may opt to turn to cheap plastics that are coated with flame retardants. Jahl noted these same retardant chemicals have also been added into the electrolyte solution of EV batteries. Once a battery gets damaged or exposed to high temperatures and the chemical reaction begins, the ensuing fire is simply too powerful for these retardants to efficiently mitigate.

“Trying to stop thermal runaway fires by adding flame retardants to plastic is like adding a screen door to a submarine,” *Ignition Handbook* author and fire scientist Vyto Babrauskas said in a statement. “It’s a futile effort against an overwhelming force.”

If thermal runaway does occur, flame retardants might help for a couple of seconds, but they won’t be able to contain the fire on their own. Eventually, the fire retardants themselves burn and release additional toxic chemicals into the air. The retardants mentioned by the researchers primarily use the chemicals organohalogens and organophosphates. Past studies have shown these may be linked to increased risks for potential neurological, reproductive, and immune harm when burned and inhaled. They are also linked to increased risks for multiple cancers.

“When you have a wildfire that goes over an urban area, there’s just a whole wide mixture of things that are burning,” Jahl said. “The battery enclosures and all the plastic in people’s homes, all of that can get mixed into that terrible plume of wildfire smoke.”

[Related: We need safer ways to recycle electric car and cellphone batteries]

Ubiquitous batteries are making natural disasters even tougher to fight

The sheer amount and growing size of lithium-ion batteries used everyday by consumers are making already deadly natural disaster events more complex. Though these types of batteries date back to the 1970s, their production has rapidly ramped up over the past decade, thanks in no small part to the accelerated adoption of electric vehicles around the world. Nowhere in the US are EVs more plentiful than in the greater Los Angeles area. The California Energy Commission notes residents in LA Country have reportedly registered at least 581,00- plug-in hybrids and EVs over the past 15 years. Nearly 1 in 5 of those vehicles were sold just last year. Even without fire retardant coatings, damaged EV batteries can release several toxic gases including phosphoryl fluoride, hydrogen cyanide, and hydrogen chloride.

Local officials say the batteries in those vehicles are already posing challenges to firefighters and clean-up crews sifting through the wreckage. The Californian Office of Emergency Services has reportedly already sent hazmat teams to homes to look for note signs of damaged batteries. These removal teams need to wear fire-resistant clothing and disposable suits as well as special face masks that filter out possible chemicals leaking from the batteries. Extra water is brought onsite to quickly put out new flames that might spark. They have their work cut out for them. The Environmental Protection Agency says it removed over 30 tons of lithium-ion batteries from 94 electric and hybrid vehicles during its clean-up of the Maui fires back in 2023. Battery cleanup for the LA fires will likely make those numbers look small by comparison.

Better battery management systems and less flammable, metal enclosures could help prevent fires without retardants

Researchers say the best solution to this growing problem might be to focus on making efforts to prevent batteries from combusting in the first place. Jahl and her colleagues at the Green Science Policy Institute say companies and local regulators could enact stricter quality assurances and quality controls to prevent manufacturing defects that might short-circuit and lead to fires. Several US lawmakers have previously called out cheaply made and less regulated Chinese E-bike batteries as being particularly prone to dangerous malfunctions. Jahl says consumer electronic manufacturers can also explore putting in place battery management systems that can continuously monitor the battery's health and temporarily shut the system down if detect the conditions for thermal runaway may be brewing. In some cases, products that have plastic enclosures coated with flame retardants may be able to achieve similar fire ratings by replacing the plastic with less flammable metal.

"Ultimately, if we can prevent the fires from starting in the first place we don't have to try to solve the problem backward by adding flame retardant," Jahl said.

Still, even those efforts may only go so far. In extreme situations like the recent LA wildfires, there's not much that can stop batteries from burning along with everything else in the fire's paths. Removing excess fire retardants won't stop that, the researchers say, but at least they won't make an already dangerous situation worse.

"This doesn't mean we should stop using batteries," Jahl added. "In many cases, they directly replace a gasoline engine or huge tanks of natural gas that people use for their homes. They're definitely a good thing that is helping us transition to clean energy. We just want to be careful not to add more harmful chemicals than are necessary."

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California Wildfires Show Challenges Of EV Battery Disposal After Car Accident or Explosion

https://www.dontgethittwice.com/blog/2025/february/california-wildfires-show-challenges-of-ev-batte/

February 01, 2025
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By Pittman Law Firm, P.L.
Recent California Wildfires are Shedding Light on the Challenges and Dangers Of Auto EV Battery Disposal After A Car Accident or Explosion

The recent wildfires in California leave behind more than just scorched landscapes. Damaged EV batteries in these zones create serious risks for the community. These batteries burn hotter and longer, releasing toxic materials into the air. Cleanup crews face dangers from reigniting batteries, especially after exposure to extreme heat or flooding. Toxic gases like hydrogen cyanide and phosphoryl fluoride further complicate recovery efforts. Without proper handling, the burnt debris can harm public health and the environment. Managing electric car battery disposal after an auto accident demands specialized protocols to ensure safety and prevent contamination.

Key Takeaways

- Broken EV batteries can be dangerous after car accidents or fires. They might catch fire or leak harmful chemicals that hurt people and nature.
- It's very important to handle damaged batteries carefully. Always think they might still have power and follow safety rules to avoid accidents.
- Recycling programs help manage old EV batteries. Join local groups that teach safe ways to throw away and recycle batteries.
- New battery technology is being made safer and better for the planet. Learn about new designs that lower risks to the environment.
- Working together as a community is important. Take part in local events and programs to teach others why safe EV battery disposal matters.

Risks of EV Batteries in Wildfire Zones

Chemical Leaks and Toxicity

Damaged EV batteries release hazardous materials that can harm the environment and your health. Lithium and cobalt, two key components of these batteries, pose significant risks when they leak. Even small amounts of these metals can contaminate soil and water, leading to long-term environmental damage. Improper disposal often worsens the problem, as leaks can trigger underground fires that release additional pollutants into the air.

- **Key risks include**:
    - Lithium and cobalt contamination in water sources.
    - Soil degradation from toxic chemical seepage.
    - Underground fires caused by battery leakage.

Flame retardants in EV batteries, such as organohalogens and organophosphates, can release harmful toxins when burned. Studies link these chemicals to neurological, reproductive, and immune system harm, as well as increased cancer risks.

Fire and Explosion Hazards

Residual heat after car accidents or explosions can cause EV batteries to reignite, even after the flames appear extinguished. This phenomenon, known as thermal runaway, makes these batteries particularly dangerous. Once a battery enters thermal runaway, it generates its own heat, spreading the fire from cell to cell. Firefighters often struggle to extinguish these fires, as lithium-ion batteries require thousands of gallons of water to cool effectively.

"When a battery goes into thermal runaway, it generates its own heat and can propagate from cell to cell. If not cooled quickly and sufficiently, it can reignite, posing a severe risk to firefighters." - Tim Rostkowski, Baltimore County Fire Bureau Chief.

You may not realize that electric vehicle fires burn hotter and longer than traditional vehicle fires. This makes them harder to control and increases the danger to recovery crews in wildfire zones.

Environmental Contamination

The chemicals released from damaged EV batteries can devastate ecosystems. Contaminants seep into the soil and water, harming plants, animals, and microorganisms. Wildlife exposed to these toxins often suffers from health issues, while plant life struggles to grow in contaminated areas.

Containing this contamination in wildfire-affected zones is a significant challenge. The widespread damage caused by wildfires makes it difficult to isolate and clean up affected areas. Over time, these chemicals can spread, further degrading the environment and complicating recovery efforts.

If you are involved in a car accident in an electric vehicle, you may face exposure to contamination and difficulty in battery disposing. Water sources may become unsafe, and the surrounding land may lose its ability to support life. Addressing these risks requires immediate action and specialized protocols for electric car battery disposal.

Electric Car Battery Disposal in California Wildfires Illuminates Many Challenges

Safety Concerns During Cleanup

Handling damaged EV batteries presents significant risks to cleanup crews. You must treat every battery as potentially energized and high-voltage, even if it appears inactive. Batteries exposed to extreme heat or water can become unstable, increasing the risk of fire or explosion. Workers face hazards like toxic gas release and reignition, especially when batteries are improperly handled.

To ensure safety, strict protocols are essential:

- Always assume the battery is damaged and energized.
- Use proper packaging to prevent movement during transport.
- Avoid storing damaged batteries; send them directly for processing.
- Exercise caution when approaching compromised batteries to minimize hazards.

Specialized training and equipment are also critical. Programs like ISRI's online training focus on high-voltage EV technology and teach safe recycling practices. These programs, developed with fire safety experts, prepare workers to handle the unique challenges of EV battery disposal.

Regulatory and Legal Hurdles

Hazardous waste disposal complicate the process of managing EV batteries. You may encounter vague definitions and unclear accountability in existing laws. This lack of clarity makes it difficult to determine whether a battery should be repaired, reused, or recycled.

Current recycling processes also pose environmental risks. Facilities often rely on methods like hydrometallurgy and pyrometallurgy, which involve toxic materials. Developing clear standards for battery inspection and recycling is essential. Policies must also address the right to repair laws, ensuring they apply to EV batteries.

Limited Infrastructure for Battery Disposal

Having the proper infrastructure for handling damaged EV batteries remains insufficient. Recycling facilities cannot meet the growing demand, leaving you with limited options for safe disposal. Transporting damaged batteries to these facilities adds another layer of complexity. Batteries require secure packaging and specialized vehicles to prevent accidents during transit.

Expanding recycling facilities and improving transportation logistics will help address these challenges. Without these improvements, the risks associated with electric car battery disposal California wildfires will continue to grow.

Broader Environmental and Health Implications

Impact on Local Ecosystems

Damaged EV batteries can severely harm local ecosystems. When battery chemicals seep into the soil and water, they disrupt the natural balance. Heavy metals like nickel, manganese, cobalt, and copper often increase after wildfires, as shown in the table below:

Heavy Metal	Concentration Before Fire	Concentration After Fire
Nickel		Increased

Manganese	Increased
Cobalt	Increased
Copper	Present

These contaminants can chemically transform, affecting both aquatic and terrestrial life. For example, soil samples from Elkhorn Slough Reserve revealed higher concentrations of these metals after a fire. Wildlife, such as sea otters, and plant life in these areas face long-term risks. You may notice reduced biodiversity and slower recovery of vegetation in affected regions.

Public Health Risks

Exposure to battery toxins can pose serious health risks to you and your community. Damaged batteries release harmful chemicals that can irritate your skin and respiratory system. Inhaling fumes from burning batteries may lead to coughing, shortness of breath, or even long-term respiratory issues.

Communities near contaminated sites face additional dangers. Over time, toxins can accumulate in the environment, increasing the risk of chronic illnesses. If you live in these areas, you may experience higher rates of health problems linked to prolonged exposure to heavy metals and other pollutants.

Contribution to Climate Change

Improper disposal of EV batteries contributes to climate change. When batteries burn, they release greenhouse gases and toxic fumes into the atmosphere. Lithium batteries, in particular, can cause landfill fires, which further pollute the air.

You should also consider the environmental cost of mishandling these batteries. Chemicals from corroded batteries leach into the soil and water, contaminating ecosystems. The complexity of EV batteries makes disposal challenging, with risks of explosions if not dismantled correctly. Addressing these issues is crucial to reducing the environmental impact of electric car battery disposal California wildfires.

Solutions and Innovations to Address EV Battery Challenges

Recycling and Recovery Programs

Emerging technologies are transforming how you can recover valuable materials from used EV batteries. Smelting, or pyrometallurgy, uses high-temperature thermal treatment to extract metals and salts on a large scale. Chemical leaching, also known as hydrometallurgy, applies chemical treatments to recover compounds from black mass, with new factories rapidly adopting this method. Direct recycling offers another innovative approach by preserving cathode structures, making it both efficient and cost-effective.

Efforts to expand recycling facilities are also gaining momentum. The EPA is working on universal waste standards for lithium batteries, with new rules expected by 2025. The Department of Energy (DOE) has allocated $3 billion to retrofit and expand domestic recycling facilities. Companies like Redwood Materials are partnering with auto dismantlers to streamline battery collection and transportation, ensuring safer and more efficient recycling pathways.

Improved Battery Designs

Advancements in battery technology aim to make EV batteries safer and more sustainable. Next-generation solutions, such as solid-state batteries, sodium-ion, and iron-air variants, promise improved fire resistance and performance. These designs reduce the risk of thermal runaway, making them safer for you and the environment. Additionally, researchers are exploring the use of less toxic materials, like silicon anodes, to minimize environmental harm.

Policy and Regulatory Changes

Stricter guidelines for battery disposal in disaster zones are essential. Clear policies can help you and others safely manage electric car battery disposal California wildfires. Governments are also incentivizing manufacturers to create more sustainable batteries. For example, the Inflation Reduction Act in the U.S. offers production tax credits for EV battery manufacturers. Similarly, Canada's Clean Technology Investment Tax Credit provides a 30% refundable tax credit for clean technology investments, including batteries.

Community and Industry Collaboration

Partnerships between governments, companies, and communities to address disposal challenges

You play a vital role in solving EV battery disposal challenges, but collaboration between governments, companies, and communities is essential. Governments can establish clear policies and provide funding for safe disposal programs. Companies, especially EV manufacturers, must take responsibility for the end-of-life management of their batteries. By working together, these groups can create efficient systems for collecting and processing damaged batteries.

For example, some automakers partner with recycling companies to streamline battery recovery. These partnerships ensure that batteries are safely transported and processed. Local governments can also work with community organizations to set up collection points in wildfire-prone areas. This makes it easier for you to dispose of damaged batteries responsibly.

Tip: Look for local programs or partnerships in your area. Many communities now offer drop-off locations for damaged EV batteries.

Public awareness campaigns on the importance of proper battery disposal

You may not realize how critical proper EV battery disposal is for protecting the environment and public health. Public awareness campaigns can help educate you and others about the risks of improper disposal. These campaigns often use social media, community events, and educational materials to spread their message.

For instance, some campaigns focus on teaching you how to identify damaged batteries and where to take them. Others highlight the environmental benefits of recycling. By participating in these programs, you can help reduce the risks associated with EV battery disposal.

Note: Always handle damaged batteries with care. Follow local guidelines to ensure safe disposal and protect your community.

Collaboration and education empower you to make a difference. Together, governments, companies, and communities can tackle the challenges of EV battery disposal and create a safer, more sustainable future.

Electric car battery disposal presents unique challenges that demand immediate attention. Damaged batteries pose risks like fire hazards, chemical leaks, and environmental contamination. Addressing these issues requires a multi-faceted approach:

- Develop policies for battery inspection and testing before recycling.
- Establish clear guidelines for repair, reuse, and repurposing decisions.

- Strengthen disaster response plans to manage tech waste effectively.

Prioritizing sustainable disposal offers significant benefits. Repurposing used batteries reduces carbon emissions and minimizes the need for new mining. Recycling also protects ecosystems and creates economic opportunities.

If you have been injured in a car accident and need an attorney, call our Fort Myers, Cape Coral, Estero, Bonita Springs, and Naples Car Accident Lawyers at Pittman Law Firm, P.L. today for a free consultation.

FAQ

What makes EV batteries dangerous during wildfire recovery?

Damaged EV batteries contain hazardous materials like lithium and cobalt. These materials can leak, causing soil and water contamination. Batteries exposed to heat may reignite, creating fire hazards. Toxic gases released during combustion also pose risks to public health and the environment.

How can you safely dispose of damaged EV batteries?

You should handle damaged batteries with care. Use proper packaging to prevent movement. Transport them to certified recycling facilities. Avoid storing them for long periods. Always follow local guidelines for safe disposal to minimize risks to your community and the environment.

Why is recycling EV batteries important?

Recycling reduces environmental harm by recovering valuable materials like lithium and cobalt. It minimizes the need for mining, which damages ecosystems. Recycling also prevents toxic chemicals from contaminating soil and water, helping protect wildlife and public health.

Are there safer alternatives to current EV batteries?

Yes, researchers are developing safer options like solid-state and sodium-ion batteries. These designs reduce fire risks and use less toxic materials. Safer batteries can help minimize environmental and health impacts during their lifecycle, especially in disaster scenarios.

How can you help improve EV battery disposal?

You can participate in local recycling programs and educate others about proper disposal. Support policies that promote sustainable battery designs. Advocate for more recycling facilities in your area. Your actions can help reduce risks and protect the environment.